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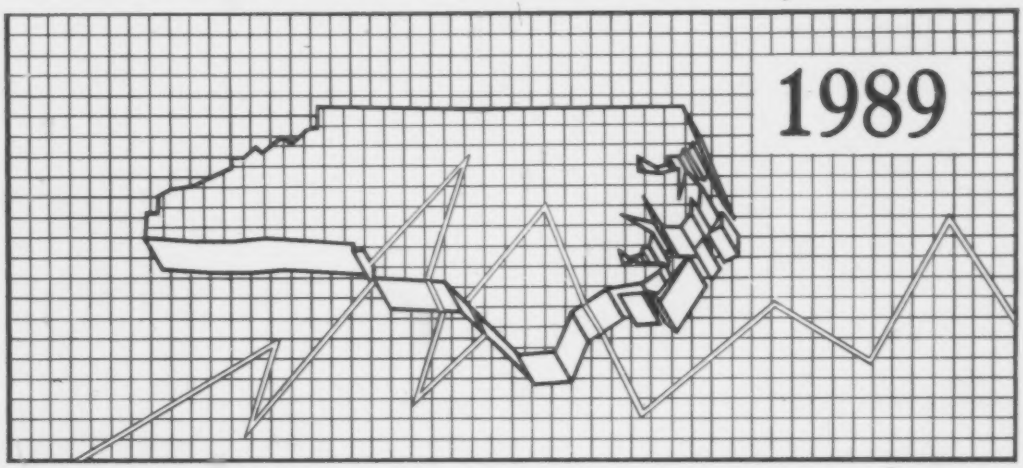
North Carolina Long-Term ECONOMIC-DEMOGRAPHIC PROJECTIONS



Office of State Budget and Management

STATE OF NORTH CAROLINA
James G. Martin
Governor

Table 1
NORTH CAROLINA LONG-TERM PROJECTIONS
(Average Annual Growth Rates)

	History				Forecast			
Economic	1970-1975	1975-1980	1980-1988	1970-1988	1988-1990	1990-1995	1995-2000	1988-2000
Total Nonagricultural Employment	2.1	3.8	2.8	2.9	1.3	1.2	1.2	1.2
Total Manufacturing Employment	-0.1	2.8	0.7	1.1	-0.5	-0.4	-0.2	-0.3
Nondurable Goods	-0.7	1.2	-0.1	0.1	-0.6	-1.4	-1.0	-1.1
Durable Goods	1.2	5.7	1.9	2.9	-0.2	0.9	0.8	0.7
Total Nonmanufacturing Employment	3.5	4.3	3.8	3.8	2.1	1.8	1.6	1.8
Construction	1.9	2.3	4.2	2.8	-3.7	2.0	2.1	1.1
Transp., Comm. & Utilities	1.3	3.5	2.9	2.5	2.2	0.5	0.5	0.8
Finance, Insurance, & Real Estate	3.4	3.0	4.0	3.5	2.5	2.3	1.9	2.2
Trade	3.1	4.6	4.6	4.2	2.4	2.0	1.6	1.9
Services	4.6	5.0	5.5	5.2	3.3	2.3	1.6	2.2
Government	4.5	4.5	1.3	3.0	2.1	1.3	1.9	1.7
Average Hourly Earnings, Manufacturing	7.4	8.9	5.5	7.0	4.8	6.5	7.3	6.4
Total Personal Income	10.4	11.9	8.7	10.2	6.2	7.3	7.9	7.2
Per Capita Personal Income	8.6	10.5	7.4	8.6	6.2	6.1	6.6	6.4
Real Disposable Income Per Capita	2.2	2.2	2.8	2.5	1.5	1.0	1.1	1.2
Demographic								
Total Population	1.63	1.26	1.20	1.34	1.09	0.95	0.91	0.96
By ages: 0 - 4	-0.66	-0.88	0.78	-0.08	0.74	0.20	-0.44	0.15
5 - 17	-0.42	-0.71	-0.71	-0.63	-0.34	0.19	0.46	0.21
18 - 24	2.19	1.59	-0.39	0.87	-1.12	-0.13	-0.86	-0.60
25 - 64	2.50	2.01	2.02	2.15	1.73	1.31	1.36	1.40
65+	4.32	3.34	3.18	3.54	2.90	2.06	1.76	2.07

Note: Rates are in percent.
Source: DRI/McGraw-Hill and the North Carolina Office of State Budget and Management.

North Carolina Long-Term Economic-Demographic Projections

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Preface

During the Spring 1980 Legislative Session, the North Carolina General Assembly amended Section 41 of North Carolina General Statute 143.3.5 as follows:

"It shall be the duty of the Director [of the Budget] through the Office of State Budget and Management (OSBM) to coordinate the efforts of governmental agencies in the collection, development, dissemination and analysis of official economic, demographic, and social statistics pertinent to state budgeting. The Division shall (1) prepare and/or release the official demographic and economic estimates and/or projections for the State; (2) conduct special economic and demographic analyses and studies to support statewide budgeting;..."

Although the primary intent of this legislation is to provide for a uniform and readily available set of economic and demographic statistics for budgeting activities within state and local governments, the Office of State Budget and Management encourages the use of this information by the general public as an aid in business and social decision making. In response to this legislative mandate, and the growing need for information regarding the long-term prospects for the national and state economies, OSBM is releasing its fourth issue of *North Carolina Long-Term Economic-Demographic Projections*. This publication is intended to provide the reader with a general analysis of the forces shaping the long-term economic outlook for the nation and the state, along with a detailed forecast for the period 1988 to 2000.

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U.S. Highlights

- Demographics play a key role in any long-term economic projection. Growth in the population and shifts in its composition affect many economic concepts, including labor-force participation, housing demand, state and local government spending, motor-vehicle purchases, health spending, and transfer payments. These long-term projections assume that the fertility rate (the average number of children that each woman would bear if she experienced average age-specific fertility during her childbearing years) levels off at 1.9, immigration averages 450,000 per year, and the mortality rate continues to decline slowly. The total population is thus projected to increase from 246 million in 1988 to 269 million in 2000, implying a continued slowdown in the rate of population growth to 0.8% per year from 1.0% since 1970 and 1.4% between 1955 and 1970.

- Despite a continued increase in the overall rate of labor force participation, the rate of growth in the civilian labor force is projected to decline to 1.2% per year between 1988 and 2000, versus 2.1% during since 1974, primarily as a result of slower growth in the adult population. This slowdown in labor force growth will bring about a decline in the rate of increase in potential output, or real potential Gross National Product, to 2.4% annually in the projection years, compared to 2.6% between 1974 and 1988 and 3.3% between 1961 and 1974.

- With total employment growing in line with labor force growth, the civilian unemployment rate will eventually settle down to the 5.5% range. While slower labor force growth could improve prospects for employment and thus drive unemployment lower, an unemployment rate consistently below 5.5% would probably lead to accelerating inflation.

- The economy is expected to add over 17.6 million jobs between 1988 and 2000, mostly in the service sector. By 2000, manufacturing will realize a net gain of only 300,000 jobs, for a total of 19.8 million, well below its 1979 peak of 21 million. Therefore, manufacturing's share of total nonfarm employment will slide to 16.2% from levels of 18.4% in 1988 and 35.0% in 1959. Conversely, about one out of every four new jobs will be in wholesale and retail trade, while more than one out of every three new jobs will be in miscellaneous (business, health, and personal) services.

- The forecast assumes that in order to maintain the civilian unemployment rate at less than 6%, the Federal Reserve is prepared to tolerate a gradual increase in inflation to 5.5% for consumer prices by the latter part of the 1990s, but no more. The nation has learned that it is very painful to reduce inflation once it gets out of hand, so continued vigilance on the part of the Fed can be expected.

- Short-term interest rates are expected to stay above their historical levels as the Fed maintains a fairly tight, anti-inflationary stance. After peaking at over 9% in 1889, the three-month Treasury bill rate is expected to slide back to around 6.5% by late 1990. Rates remain relatively stable during the 1990s in the TREND scenario. Given lower short-term rates, bond yields will fall as the federal deficit's share of the economy keeps declining through the 1990s. The yield on long-term Treasury bonds is expected fall from 8.8% in 1990 to 8.5% by 2000.

- Declining growth in real disposable income and real household net worth projects growth in real consumption of only 1.9% over the forecast period, a significant drop from the 3.2% recorded between 1974 and 1988. As in

the recent past, nondurable goods will remain the weakest category as real spending grows by only 1.3% per year. Although spending on durable goods will remain the strongest, its average rate of growth of 2.4% will be only half of the rate since 1974. The growth in spending on services will also weaken, dropping by more than one percentage point from the 1974-88 average.

- As a result of the exhaustion of the pentup demand of the early 1980s and changes in the tax treatment of rental property, housing starts are expected to remain fairly weak, averaging 1.48 million units over the next three years. As mortgage rates decline somewhat and vacancy rates decline in the early 1990s, starts will rebound to an average 1.58 million per year from 1994 to 2000.

- Bouyed by purchases of office equipment, primarily computers, the real stock of producers' durable equipment is forecast to grow 4.4% per year between 1988 and 2000, up from 3.9% between 1974 and 1988. All major nonresidential structures categories (commercial and industrial buildings, public utility structures, and drilling and mining) show substantially weaker capital stock growth. The brightest outlook in nonresidential capital growth is for industrial buildings, as many industries begin to feel capacity contraints.

- In the near-term, U.S. economic growth will be largely fueled by export trade. Gains in real net exports are expected to add 1.1 percentage points to real GNP over the 1987-1990 period. During the 1990s, an improving outlook for economic growth in the rest of the world along with a gradual reduction in foreign barriers to U.S. exports will cause the U.S. merchandise trade deficit to decline from a record $158 billion in 1987 to $88 billion in 1990, and should decline further to $26 billion by 2000.

- Despite the slowdown in economic growth, the expansion of industrial output will accelerate over the projection period. Reversing the trend of the past 25 years, the combination of favorable outlooks for trade and investment projects an increasing share of goods in GNP during the 1990s. Capacity utilization in manufacturing will average 84.1% between 1988 and 2000, slightly higher than the 79.3% average of the last 14 years.

- Although the federal budget deficit is expected to remain above $100 billion over the projection period, its share of GNP will decline to 1% in 2000 from a peak of 6.3% in 1983. This improvement, however, is precarious, requiring stringent fiscal policies and continued economic growth.

- As the current overproduction is erased by increasing demand from a growing world economy, real crude oil prices are expected to turn upward over the projection period. U.S. refiner acquisition prices averaged $14.70 per barrel in 1988, $3.20 less than 1987. Prices should increase to $17.20 by 1990. In real terms, prices will regain pre-1986 levels by the end of this century, with crude oil acquisition prices averaging $20 per barrel in 1982 dollars or $44 in current prices.

Long-Term National Economic Forecast

The Near-Term Outlook (1989 to 1990)

Growth in the U.S. economy was surprising strong in 1988. Adjusting for the loss in farm output resulting from the severe drought in the midwestern states, real Gross National Product (GNP) expanded by 4.2% in 1988, up from the 3.4% recorded in 1987, and over twice the growth rate forecast at the beginning of the year.

This was quite unexpected considering that the national economy had just experienced the largest decline in stock market values since the late 1920s. The 508 point drop in the Dow Jones Index of 30 Industrials on October 19, 1987, was the second largest on record in both absolute and percentage (22.6%) terms, even exceeding the 12.8% decline on October 28, 1929. "Black Monday" resulted in a decline in household assets of nearly $1 trillion, or $4,000 per person in the U.S. Since previous studies had indicated that consumer spending falls four cents for every one dollar decline in stock prices, most economists expected a significant slowdown in real GNP growth in the first half of 1988. Some were forecasting the onset of the next recession.

In fact, drought-adjusted real GNP growth accelerated to a 3.7% annual rate in the first two quarters of 1988, far outpacing earlier predictions. Many theories were offered to explain this strong post-crash performance. Three of the more persuasive explanations are:

• *The Prompt Response of the Federal Reserve Board.* Immediately after the crash, the Fed acted to loosen monetary policy, providing the banking system with more reserves. As a result, the rate on 3-month treasury bills fell from 5.3% on October 30th from 6.7% at the end of September.

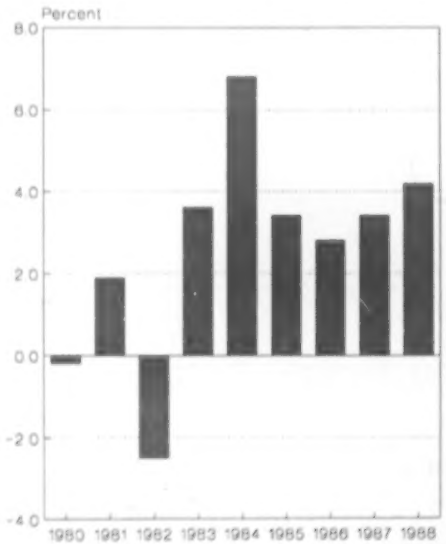
• *The Loss in Wealth Was All "Paper Losses".* Despite the precipitous decline on October 19th, average stock prices were still at about their level of one year earlier. In other words, the huge loss in stock values was "only on paper." Many later argued that this paper loss would not produce the expected decline in consumption.

• *The Crash Hurt "Wall Street", Not "Main Street".* Some argued that wealthy families own most of the stock in the U.S. The fact is, households with a net worth of $250,000 or more account for less than 6% of all households, but have more than 70% of the volume of personal stock holdings. Therefore, most households own little or no stock, and were not directly affected by the crash. Anecdotal evidence indicated that many people on "main street" had little sympathy for the plight of those on "Wall Street." Additionally, wealthy households did not curtail their spending as stock prices fell, since they have other financial assets and a large borrowing capacity.

Perhaps for these reasons, and others, consumer spending did not slow in the first half of 1988. In addition, booming business spending on new equipment, along with the turnaround in U.S. exports, caused a shift in the concerns of policymakers away from recession and toward inflation by mid-1988. Following strong reports of employment growth in June and July, the Fed became sufficiently worried about the prospects for inflation to hike the discount rate on August 9th from 6% to 6.5%.

The economy continued on a strong growth trend throughout the last half of 1988. Real GNP growth, adjusting for the drought, averaged 3.0%, only slightly less than the first half of the year. This was well ahead of the Fed's GNP growth target of 2.0 - 2.5%, above which inflation would likely accelerate. Monthly growth in nonfarm employment

Chart 1
GROWTH IN REAL GROSS NATIONAL PRODUCT



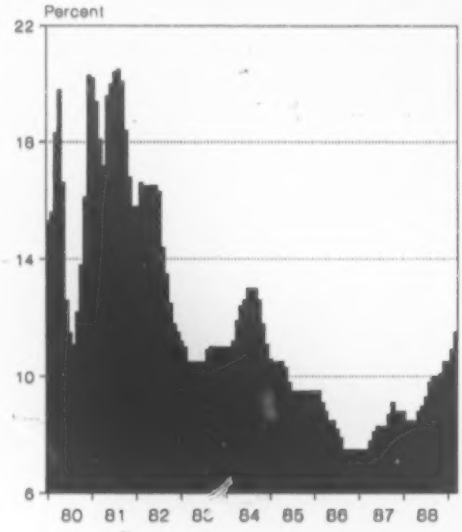
averaged 300,000 between July and December, again well above the Fed's target of 250,000 per month. By year-end, the civilian unemployment rate had fallen to 5.3%, near the concensus estimate of "full employment'. The capacity of the nation's factories was also showing signs of strain. The average rate of capacity utilization hit 84.2% in December, with many industries operating at rates in excess of 90%.

Although price increases at the consumer level remained fairly tame in 1988 (4.4% increase), inflation at earlier stages of processing was rising at a much faster clip. After holding nearly steady in 1986, prices of intermediate goods excluding food and energy rose by 5.2% in 1987, and jumped by nearly 7.5% in 1988. Certain raw materials posted double-digit increases. With this information in hand, the Federal Reserve Board continued to gradually push up short-term interest rates over the last half of 1988. By the end of the year, the 3-month treasury bill rate stood at 8.1%, up from its 1988 low of around 5.6%.

The available economic indicators for the first quarter of 1989, primarily labor market indicators, show that economic growth remains strong. Nonfarm payroll's expanded by 289,000 in February, remarkably strong following the 415,000 surge in January. The rate of civilian unemployment slid to 5.0% in March, a 15-year low. Tight labor market conditions are creating upward pressure on wages. For the twelve months ending in February, the hourly wage in the private nonfarm sector rose by 4.2%, the largest gain in almost four years. Further increases in wages are expected in the months ahead for two reasons: the likely increase in the federal minimum wage will push up all wages at the bottom of the pay scale, and the growing shortage of workers in the skilled professions, especially nursing and engineering, will add further to inflationary pressures.

There is evidence in the 1989 first quarter data that previous upstream price hikes are now surfacing at the producer and consumer levels. Producer prices leaped by 1% in both January and February, a 12.6% annual rate. The consumer price index was up a smaller 0.4% in February, after rising by 0.6% in January or a two-month annual rate of 6.1%. Responding to these recent sharp price increases, and the overall strength in employment and income growth, the Fed moved to further tighten monetary policy, aggressively raising short-term interest rates in February. Following this lead, the major banks boosted their prime lending rate to 11.5% on February 23rd. This hike was quickly reflected in consumer borrowing rates for car-loans and mortgages, exacerbating already weakening conditions in those industries. After a healthy 8.4 million (annual rate) sales month in December, car sales have fallen to 7 million units in January and 6.2 million in February. Domestic and foreign manufacturers have responded with a new round of incentives (rebates and cheap financing) which should bolster sales later in the spring. Housing starts slumped 11.4% in February to an annual rate of 1.5 million units, more than offsetting the weather-induced 7.2% gain in January.

Chart 2
PRIME RATE
(Monthly Average, Jan 1980-Mar 1989)



The course of economic growth into 1990 now largely rests with the consumer. In the view of DRI/McGraw-Hill, the recent aggressive monetary tightening by the Federal Reserve Board will result in rising fears of recession, a pronounced decline in consumer confidence, and a concomitant slowdown in consumer spending growth in mid-1990. Personal consumption is forecast to slow from an average annual rate of around 2.4% in the first half of 1989 to an average of 0.7% in the middle quarters of 1990. This cycle will be particularly harmful to durable goods expenditures as high interest rates retard spending on housing (and therefore furniture) and motor vehicles. The weakness in descretionary income growth during

the slowdown will also reduce spending on "other" durable goods (including jewelry, boats, aircraft, books, and sporting goods).

After a phenomenonal 13.4% increase in 1988, real investment in business equipment is expected to slow sharply in 1989 and 1990. A continuing high level of incoming orders along with a large backlog of orders suggests that equipment purchases will continue to grow at a moderate 4.6% in 1989. With the economy weakening in 1990, equipment investment growth is forecast to fall to 0.9%. After declining by 0.3% in 1988, nonresidential investment in structures is expected to remain in the doldrums, declining by 2.3% and 1.0% in 1989 and 1990 respectively. A slackening of current capacity utilization in the industrial sector and previous overbuilding in the commercial sector are the prime causes of this decline in new construction. Overall, real GNP growth is expected to slow to 2.7% in 1989 and 1.5% in 1990.

With inflationary pressures relieved, the Fed can loosen monetary policy in 1990, resulting in a sharp decline in short-term interest rates. After averaging 9.0% in the second quarter of 1989, 3-month treasury bills fall to nearly 6.5% by the end of 1990, resulting in a rather vigorous recovery in 1991 when real GNP expands by 3.2%.

The Long-Term Outlook (1991 to 2000)

Supply-side factors dominate the long-run growth outlook, with the economy eventually growing parallel to its potential ceiling. Long-term analysis first examines the likely behavior of potential output -- the output that could be produced at high but stable levels of utilization of both labor and capital.

The two most important determinants of potential output are the labor force and the capital stock. The labor force expanded at a 2.1% average annual rate from 1962 to 1988, climbing from 70.6 million to 121.7 million. Growth was especially strong during the 1970s, when the labor force averaged 2.7% annual gains, higher than in any decade since the 1900s. Labor-force growth is determined essentially by changes in the rate of labor-force participation and changes in the rate of growth in the adult population. The labor-force participation rate (the ratio between the labor force and the civilian population) was essentially flat from 1948 to 1963, with declines in male participation approximately offset by increases in female participation. From 1963 to 1967, however, the overall participation rate rose from 57.6% to 64.5%. Female participation grew from 38.3% to 56% between 1963 and 1987, with women contributing 60% of labor-force growth during that period. Expressed another way, over the same interval, the female participation rate increased from 47% to 73% of the male rate. And as the female participation rate approaches that for males, it is inevitable that gains in the overall participation rate will slow. Specifically, the labor-force participation rate is projected to reach 66.8% by the year 2000.

The impressive rate of labor-force growth reflects not only higher female participation rates, but also the maturing of the baby-boom generation. With the number of people turning 18 in any one year rising from 2.3 million in 1958 to 4.3 million in 1979, the adult population (from which the labor force is drawn) grew significantly faster than the total population. In contrast, growth of the adult population will slow, with the number of people turning 18 fading to only 3.2 million by 1994.

As a combined result of the leveling out of the labor-force participation rate and slower growth of the adult population, labor force growth is expected

Chart 3
GROWTH IN U.S. LABOR FORCE

to decelerate over the projection period. The labor force is projected to expand by an average of only 1.2% annually between 1988 and 2000, nearly half the rate recorded since 1962, which will have important implications for the economy's ability to increase supply.

On the other hand, the rate of growth of the capital stock is expected to recover from its recent, relatively dismal performance as producers' durable equipment spending regains momentum, building construction eventually begins to revive and drilling investment picks up. With this recovery in business fixed investment and Research and Development (R&D) spending offsetting the steady slowing in labor-force growth, potential output growth should hold up fairly well over the next several years. Eventually, though, the effects of diminished labor-force growth become dominant and, in a sense, self-perpetuating. As output growth drops off, business fixed investment rises less rapidly, limiting capital-stock growth and therefore future increases in output. Potential growth is projected at 2.4% through 2000, down from the 2.6% averaged since 1974.

Actual output can, of course, grow faster or slower than potential output; in general, the unemployment rate falls in the former and rises in the latter. Since the U.S. economy could not sustain an unemployment rate much lower than the present level without experiencing continuing accelerating inflation, the average rate of actual output growth cannot deviate too far from that of potential output in the next 12 years. The slowdown in potential growth therefore, dictates similar behavior in actual output. Real GNP is expected to average 2.3% over the projection period, compared with 2.6% since 1974 and 3.8% during the 1960s. A fundamental message of the long-term outlook is that growth will continue to average significantly less than that recorded for most of the postwar period.

Forecast Detail

Employment, Unemployment, and Labor Productivity

In the smooth-growth environment of the TREND projection, unemployment eventually settles down in the 5.5% range. While slower labor-force growth could ostensibly improve employment prospects and thus drive unemployment down further, an unemployment rate consistently well below 5.5% would probably lead to accelerating inflation. Accordingly, the projection is not so much a reflection of the economy's ability to absorb labor-force growth as it is an assessment of what constitutes a noninflationary degree of slack in the labor market.

The civilian unemployment rate is expected to average 5.5% in 1989, rising to 5.8% in 1990 as the economy slows. After 1990, employment grows by at an average rate of 1.3%, roughly in line with labor-force growth. The cumulative increase in employment between 1990 and 2000 is only 12.7%, or 14.0 million jobs. This compares with 19.3%, or 19.3 million jobs, between 1980 and 1990.

Over the entire projection interval, the economy will add over 17.6 million jobs, mostly in the service sector. The manufacturing share of total nonfarm employment will continue the downward direction typical during most of the postwar period: this share dropped from 35.0% in 1959 to 18.4% in 1988, and is projected to fall to only 16.2% by 2000. The

Chart 4
MANUFACTURING EMPLOYMENT AS A PERCENT OF TOTAL NONFARM EMPLOYMENT

long-run shift in employment composition toward services reflects both the increasing demand for services by households and businesses and the

strong productivity increases in manufacturing that have diminished goods-producing employment needs. About one out of every four new jobs will be in wholesale and retail trade, while more than one out of every three will be in miscellaneous (business, health, and personal) services. The latter category, now employing more than 20% of all workers, will exhibit impressive growth rates over the projection period. Growth will slow eventually, however, from 5.2% in 1988 to nearly 1.0% in the later years of the projection. One of the most dynamic areas within the miscellaneous category is business services, which is already one of the fastest growing industries and will continue to expand as the demand for consulting services, computer and data processing, and personnel services outpaces the rest of the economy. The aging population will fuel demand for health services, while legal services and entertainment industries will also show high employment growth. The finance, insurance, and real estate industry will also experience better-than-average gains, averaging 1.8% annually compared with 3.4% between 1974 and 1988.

In the public sector, nearly all job growth will occur in state and local governments. Most significant for this sector will be the resurgence of the school-aged population. The elementary school age group has already begun to rise again after dropping between 1969 and 1983, and the high-school age population will begin to pick up in the early 1990s. These demographic movements will necessitate the hiring of a substantial number of new teachers at the state (higher education) level and at local public schools. Currently about half of all state and local government employees are involved in eduation; this share is expected to increase over the projection period. Thus, state and local government employment will experience above-average growth of 1.3% annually, adding 2.4 million jobs by 2000, compared with an increase of only 0.3 million in the federal government during the same period.

The goods-producing sector will barely maintain its current employment level over the course of the projection. As a share of total employment, manufacturing, mining, and construction dropped from 38% in 1960 to 24% currently, and this share will likely fall to 22% by 2000.

Although the manufacturing sector should maintain its share of total output over the forecast period, manufacturing employment will continue to fall as a share of total employment as high rates of productivity growth curtail labor needs. After it recovers all of the 220,000 jobs lost in 1989-90, the manufacturing sector will see virtually no increase in employment thereafter. By 2000, manufacturing employment will stand at 19.8 million, still well below its 1979 peak of 21.0 million and not very different from its present level.

Only a few manufacturing industries will employ more workers than ever 12 years from now. These include the printing and publishing, rubber and plastics, instruments, furniture, and electrical machinery industries. Printing and publishing, which has always shown impressive job growth, will see a nearly 20% increase in payrolls by 2000. Employment growth in the rubber and plastics industry will total 19% over the next 12 years, as continuing strong growth in plastics usage will offset slowing rubber production. The fastest growing manufacturing industry, however, is expected to be the nonelectrical machinery industry, which includes computer manufacturers. Employment will rise 1.7% annually between 1988 and 2000 for a total gain of 15.8%.

The occupational position of manufacturing employment will also continue to shift. The wealth of labor-saving technology introduced at the assembly-line level will mean that fewer and fewer workers are actually involved in production while more are needed in administrative, sales, and technical positions. The U.S. Department of Labor, Bureau of Labor Statistics estimates that the share of production workers (machine operators, laborers, etc.) employed in manufacturing industries will fall about two percentage points between 1988 and 2000.

Unlike manufacturing, the real output of mining and construction has been declining throughout the postwar period as a share of the economy's total output. The construction industry will lose nearly 270,000 jobs between 1988 and 1992 as tax reform and higher interest rates take their toll on building activity. The long-term outlook is more sanguine, however; after 1992 construction employment will grow moderately, gaining 740,000 jobs by 2000. Mining employment will decline by 0.9% annually on average between 1988 and 2000 as domestic production of oil shrinks.

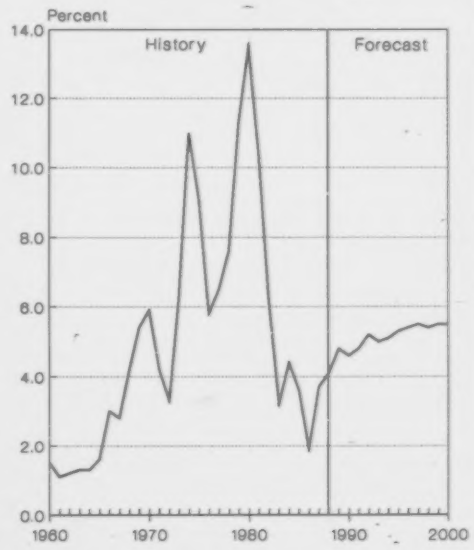
The projected slowdown in labor-force growth contains two productivity-enhancing benefits. First, the average age of workers will rise, implying that a larger share of the labor force will be in the more

productive age groups. Second, the ratio of capital to labor can increase faster than it would otherwise. As a result, output per hour is projected to rise at a 1.3% average annual rate, a notable improvement over the 1.0% annual gains recorded since 1974.

Inflation

Inflation should be higher over the rest of the century than currently, but it will not regain the double-digit rates of the late 1970s and early 1980s. The CPI will increase an average 5.2% from 1988 to 2000, compared with 6.5% from 1974 to 1988, while the broader GNP deflator is expected to increase 5.0%, compared with 6.0% over the earlier period.

Chart 5
INFLATION IN CONSUMER PRICES
(CPIU-Annual Percent Change)



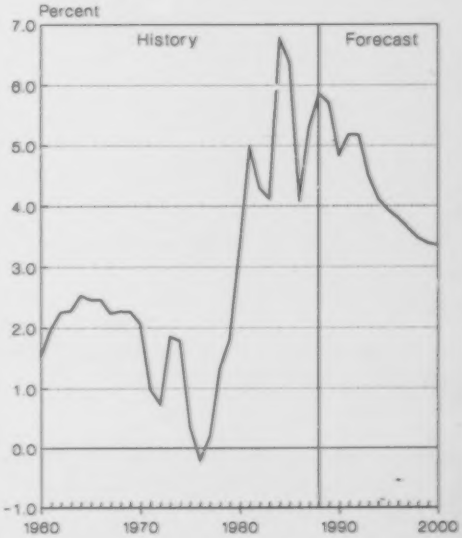
The inflation rate for the CPI in 1987 was only 3.7% and for the GNP deflator just 3.0%. Inflation accelerated to 4.1% in 1988 and is expected to reach 4.8% in 1989 as the unemployment rate bottoms out at 5% -- too low to be consistent with stable inflation. The unemployment rate should move up to 5.8% in 1990 and remain in the 5.5% range for the rest of the 1990s, limiting the upward pressure on inflation from wages. As a result of renewed increases in real oil prices, however, the inflation rate will creep up in the second half of the 1990s, with the CPI rising by 5.5% and the GNP deflator rising by 5.3% between 1995 and 2000.

Although tightening in the markets for labor and oil will put upward pressure on the inflation rate, the key ingredient in the long-run outlook for inflation is the tolerance limit of the Federal Reserve. The Fed could offset these pressures, holding the inflation rate below 5%, by tightening monetary policy, although at the cost of a period of below-average growth. The DRI projection assumes the Fed is prepared to tolerate a gradual increase in the inflation rate to 5.5% (but no higher) for consumer prices by the latter part of the 1990s. The nation has learned that it is very painful to reduce inflation once it gets out of hand, so continued vigilance on the part of the Fed can be expected. Furthermore, the financial markets are very sensitive to the slightest sign of an increase pickup in inflation, remembering well how bondholders were hurt by the high rates of the 1970s. Any increase in inflation fears is quickly translated into higher long-term interest rates, which has the effect of slowing the economy and automatically diminishing the chances of an inflation uptick. As memories of the inflationary 1970s fade, however, both the Fed and the financial markets will probably tolerate higher inflation than they would today.

Financial Conditions

The financial outlook is inextricably linked with that of inflation. In particular, it is likely that real

Chart 6
REAL LONG-TERM INTEREST RATE



interest rates (market interest rates less the expected rate of inflation) will remain significantly above their pre-October 1979 average values; deregulation and relatively stringent targeting of money-supply growth appear to have permanently raised the cost of funds to financial institutions.

Real long-term interest rates are still close to 5% and may hover there for several years before retreating to close to 4%, still well in excess of their historical norm. This decline in real rates is likely to occur in the context of fairly stable nominal rates and increases in the expected rate of inflation. In nominal terms, the 30-year government bond yield is projected to stabilize between 8.0% and 9.0%.

In this scenario, the Federal Reserve takes an accommodative stance, implying that the money supply (M2) grows approximately in line with nominal GNP, around 7.5%. Stricter monetary control would naturally lead to lower average inflation, but only at the expense of a possibly large loss in output.

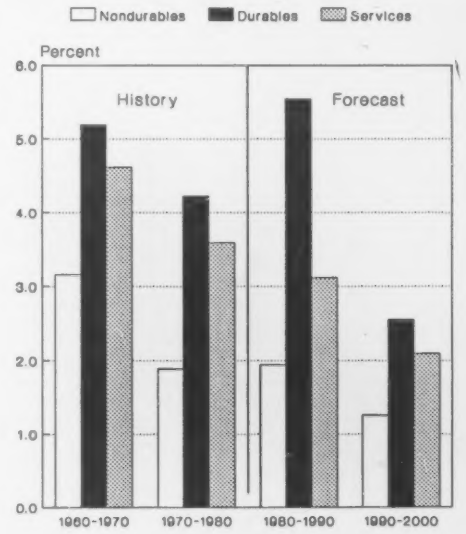
Consumer Spending

Real consumption spending is expected to grow at only a 1.9% rate for the remainder of the century, well below the 3.2% observed between 1974 and 1988. Meanwhile, real disposable income growth will drop from 2.8% in the 1974-88 period to 2.0% through 2000, and growth in real household net worth declines from 3.7% to 2.0%. The strongest yearly gain in real consumer spending of 2.6% in 1989 is still below the average growth of any postwar decade.

Consumption growth will be far short of income growth in the near-term as consumers react to rising unemployment and the saving rate will jump from 3.8% in 1987 (the lowest level since 1947) to nearly 5.0% in 1990. Real spending growth, then, will nearly match real disposable income growth until the end of the 1990s when consumption spending slows and the saving rate moves up again. The weak growth of consumption relative to income contrasts sharply with the pattern of the recovery to date. Real consumption growth has outpaced real disposable income growth in all but one of the last seven years.

One casualty of the anticipated weakness in income and spending growth will be improvement in living standards. Real per capita consumption grew at a 1.5% annual rate from 1947 to 1963 before surging at a 2.4% rate from 1963 to 1988; it is expected to rise at a rate of only 1.2% over the projection period, despite slower population growth. Nondurable goods will remain the weakest spending category. Real spending will grow only 1.3% through 2000, held down by declining gas and fuel oil expenditures (caused by large price increases) and weak growth in food expenditures as population growth slows. The only bright spot in this category will be real clothing expenditures, where low price increases help boost spending growth to 2.2%.

Chart 7
GROWTH IN REAL CONSUMPTION
(Annualized Percent Change)



Spending on durable goods will continue to be the strongest area of consumer spending, with real growth of 2.4% expected from 1988 to 2000. Still, this is less than half of the rate of growth since 1974. Overcoming the weak housing market, furniture sales will lead the category with 2.9% growth, helped by low price increases. Durable goods spending (including sporting goods, jewelry, books, boats, and aircraft) will grow by 2.8%, boosted by continued gains in the number of two-earner households and moderate price increases. Auto sales are expected to show the weakest growth (1.7%), hurt by high energy prices, slower growth of the driving-age population, and above-average price increases.

Real growth in spending on services will be slightly above average, but more than one percentage point below the 1974-1988 period. Expen-

ditures on medical services will lead the way with 2.4% growth, followed by housing services (2.3%), other household operations (2.2%), and electricity (2.2%). Spending on natural gas will actually decline by 0.4% as a result of huge price increases. Real spending growth of transportation services is also expected to weaken as energy prices keep transportation price increases above average and the declining value of the dollar weakens demand for overseas travel.

Looking at a few of the major expenditure items, the U.S. automobile market has largely plateaued. While vehicle sales will continue to rise with increases in population and the labor force, the 16.1 million unit level established in 1986 will not be topped again until 1995. Virtually all of the determinants of car sales suggest slow growth. Real income should rise just 2.1% annually between 1988 and 2000, down from 2.8% between 1974 and 1988. Similarly, compared to the period 1974 to 1988, it is anticipated that the driving-age population will increase just 0.8% per year (from 1.5%), the labor force to edge up just 1.2% (from 2.1%), and the number of households will rise a meager 1.3% (versus 1.9%). Finally, the cost of car ownership relative to other consumer prices should rise with increasing gas prices throughout the projection period, reversing the trend established over the last 15 years and certainly the pattern of the last 30 years.

Although real spending on furniture and household equipment will show above-average growth between 1988 and 2000, the 2.9% growth is still well below the 5.3% growth since 1974 and 6.3% increase of the 1961-74 period. What strength there is will come from the anticipated 5.6% increase in sales of radios, televisions, and musical instruments (down from 11.4% from 1974 to 1988). As in the past, growth in this component will result from the introduction of new products and continued price declines because of new technology. Growth in real spending on furniture, floor coverings, and appliances will average less than two-thirds of one percent.

Growth in real spending on food and clothing should be less than half of that recorded from 1974 to 1988. Spending on food will be slowed by declining population growth and high prices which reduce the growth of restaurant spending. While spending on clothes is hurt by low growth in income and population, low price increases offer some support.

Increasing petroleum prices will cause the price of gasoline and fuel oil to rise 7.4%, retarding spending growth by encouraging conservation and the purchase of still more fuel-efficient automobiles. Real gas purchases will peak in 1992 at $105 billion, while real fuel oil expenditures decline 1.2% annually over the projection period in spite of 6.2% nominal spending growth.

Housing and household services are projected to show relatively small declines in growth from the previous period. Housing services will overcome the slowdown in household formation later in the 1990s to show 2.3% growth. Spending on household operations will also maintain a 2.0% pace as accelerating natural gas prices and lower electricity price increases continue to cause consumers to switch between the two.

Medical service spending should continue to outpace average service spending growth, but by a much smaller amount as growth in the elderly population moderates through the 1990s. Growth of spending on transportation services is also nearly halved because of energy price inflation. Growth in other services, including personal brokerage and business, recreational, religious and welfare, and net foreign travel services, will drop even more sharply, with price increases and the declining dollar at least partly to blame.

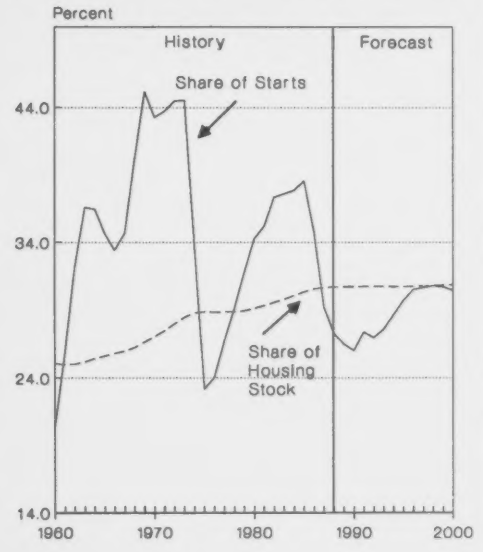
Housing

As a result of the pent-up demand remaining from the high mortgage rates of the early 1980s, housing starts averaged 1.76 million per year from 1983 to 1986. As this demand was exhausted and tax treatment of rental property changed, starts fell to 1.63 million in 1987. As mortgage rates moved up during 1988, housing starts fell to an average rate of 1.49 million units. Construction is expected to remain fairly weak for the next three years, holding at a 1.48 million unit average rate as mortage rates average almost 11%. Mortgage rates will then retreat somewhat in the early 1990s, while falling vacancy rates will stimulate construction of rental units. Starts will rebound to 1.60 million in 1993 and average 1.58 million per year from 1994 to 2000.

The distribution of new residential construction between single-and multi-family units depends on several factors, including the tax treatment of rental property, rental vacancy rates, and the age distribution of household heads. In 1981, the average tax lifetime of rental property was sharply reduced, allowing owners to depreciate buildings more quickly than under the old system. After averaging 29% of all starts from 1974 to 1980, multi-

family units accounted for 37% of the total from 1982 to 1986. Because demand for the new units failed to keep up with supply, however, the rental vacancy rate rose from 5.1% in 1981 to 7.4% in 1986. As part of tax reform in 1986, the average tax lifetime of rental property was extended once again,

Chart 8
MULTI-FAMILY SHARES OF TOTAL HOUSING STARTS AND OF THE PERMANENT-SITE HOUSING STOCK



removing the relative incentives for construction of rental property. Multi-family starts have not resumed their pre-1981 share of total construction, however, because the market is now hampered by the glut of vacant units. Multi-family starts will average only 26% of the total in 1989 and 1990. As vacancy rates return to more normal levels in the 1990s, multi-family starts will account for nearly 30% of the total starts between 1991 and 2000.

Because of different preferences for housing among various age groups, shifts in the age distribution of the population can have an important impact on the type of units constructed. The most striking example of this was the market's response to the surge in households headed by those 65 and over after passage of large increases in Social Security benefits in the early 1970s. Senior citizens are more likely to rent than several other age groups. They are also more likely to live in mobile homes. Consequently, multi-family starts, which never exceeded 670,000 in any year before 1970 or after 1972, averaged 950,000 per year in 1970-72, representing 44% of the total starts. Shipments of mobile homes, which never exceeded 410,000 in any year before 1970 or after 1972, averaged 550,000 per year during the period.

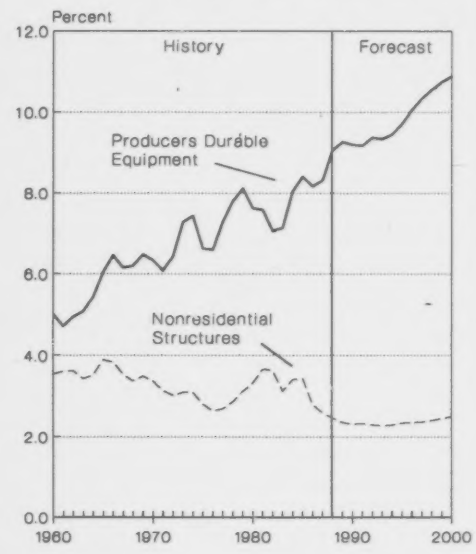
Similarly, 25 to 34 year-olds are more likely to rent and less likely to own than members of other age groups. As the baby boomers move into the 35 to 44 year-old group, there will be a shift away from multi-family units, the majority of which are built for rent. In 1967, 25 to 34 year-olds accounted for 20.1% of the population aged 22 and older. As those born after World War II began to enter this age group, the 25 to 34 year-old share of the total population steadily increased, hitting 26.2% in 1981. Since then, it has stayed at roughly the same level. Beginning in 1990, however, the low birth rates of the mid-1960s will begin taking their toll on this group. By 2000, only 19.8% of the population aged 22 and older will be 25 to 34 year-olds.

The DRI projection of a fairly stable multi-family share in the total stock of housing units assumes that the increased demand for ownership can be satisfied by condominiums and co-ops, which fall into the multi-family category. Obviously, if this fails to occur, construction will undergo a major shift from multi-family towards single-family units. A reduction in the share of multi-family units in total permanent site housing from its predicted 31.7% in 2000 to 29.5%, for example, would require a shift of 110,000 starts from multi-family to single-family each year from 1990-2000.

Business Investment

Business fixed investment as a share of nominal GNP fell to a 16-year low of 9.9% in 1987, after peaking at around 12% at the beginning of the decade. This decline is a discouraging indication that the United States has not been using the inflow of savings from abroad represented by the current account deficit to invest in productive assets. Even the 1988 surge in investment spending (9.2% in nominal dollars) is sufficient only to push nominal business investment up to 10.0% of GNP, well below the average of 11.0% from 1975 to 1987. The share of business fixed investment in nominal GNP does not tell the whole story, though. As far as growth in the economy's productive capacity is concerned, real rather than nominal spending is the relevant concept. With productivity advances leading to declines in the price of investment goods relative to other goods, business fixed investment will continue to climb as a share of real GNP. In par-

Chart 9
SPENDING AS A SHARE OF REAL GNP



ticular, the price of office equipment (which consists mostly of computers) has dropped at near double-digit rates during the 1970s and 1980s and should continue to fall in the future. The office equipment expansion plays a very important role in the historical increase in the share of real business fixed investment in real GNP. Excluding office equipment, the share has declined sharply since the late 1970s.

As well as being increasingly devoted to computers, business fixed investment expenditures have been more and more to replace investment rather than net investment. While these two trends are naturally related, because computers tend to have relatively short useful lives, there is a general tendency for investment to be concentrated in shorter-lived items that require more frequent replacement. The share of real net investment in real GNP has declined gradually since the mid-1960s.

If the United States is to produce the goods and services necessary to reduce the balance of payments deficit to a level sustainable in the long run, it needs to increase the ratio of real net investment to real GNP. Several industries are already running close to capacity -- for example, paper and chemicals -- and although they have thus far been reluctant to expand their capital spending, substantial increases took place in 1988. If a sustained increase in the share of net investment in real GNP is to be accomplished, at the same time that real net exports are taking a larger share of real GNP, consumer and government spending must take reduced shares. Consumer and government fiscal restraint incorporated in the DRI TREND projection allows the real cost of funds (a weighted average of debt and equity financing costs) to drop from a peak of 5.4% in 1988 to 4.6% in 2000, a level similar to that in the 1960s. As a result, real business fixed investment reaches 14.0% of real GNP by 2000, up from 12.2% in 1988. Note that the improvement in the real net investment share is much less, although substantial (from 2.2% in 1987 to 3.0% in 2000), since replacement needs will continue to grow strongly. The real net stocks of nonresidential fixed capital will grow at 2.8% per year, no faster than in the period from 1974 to 1988, but an improvement over the average 2.5% increase recorded so far in the 1980s.

The real stock of producers' durable equipment is forecast to grow 4.4% between 1988 and 2000, up from 3.9% between 1974 and 1988. To achieve this growth, real equipment spending must rise steadily as a share of real GNP as replacement requirements become more onerous for a stock increasingly of short-lived items such as computers and automobiles.

All major nonresidential structures categories show substantially weaker capital-stock growth over the projection period than in the recent past. Each category suffers from previous overinvestment which has left excess capacity to be absorbed. The capital stock of nonresidential buildings, the largest category, will grow just 1.4% per year between 1988 and 2000, down sharply from 2.1% between 1974 and 1988. The generous depreciation lifetimes laid down by the Economic Recovery Tax Act of 1981 led to an enormous increase particularly in tax-shelter motivated investment in offices, but also in other commercial buildings. The Tax Reform Tax of 1986 removed the tax-shelter incentives, but a large surplus of buildings remains.

With the improvement in foreign trade demand for manufactured goods and straining capacity in some areas, the outlook for industrial buildings is a little better. Nevertheless, there is no prospect of a return to the high construction levels of the 1960s or even to the more modest levels of the 1970s. The anticipated long-run decline in the share of in-

dustrial building construction in real GNP reflects the gradual shift in the composition of the economy from manufacturing to services.

Public utility structures spending has declined steadily as a share of real GNP since the early 1970s and will drop further before stabilizing in the 1990s. Capital spending in the electric utility industry will decline until the early 1990s.

Exports and Imports

The turnaround in U.S. trade since 1986 has been dramatic. Real merchandise exports surged 18.4% over the four quarters of 1987, led by exceptional gains in consumer goods, computers, electrical machinery, paper, chemicals, and farm products. Sparked by the dollar's depreciation, merchandise exports are projected to show double-digit increases through 1989. This export boom will create manufacturing jobs and sustain the economic expansion. Gains in real net exports are projected to add 1.1 percentage points to real GNP growth over the 1987-90 period. Rising import prices will, however, contribute to higher inflation. With exports soaring and import growth subsiding, the merchandise trade deficit is projected to narrow from a record $158 billion in 1987 to $116 billion in 1990, improving further to $72 billion by the end of the century.

Although significant improvement in the trade deficit is anticipated, the obstacles to restoring balanced trade are enormous. The dollar's overvaluation in the first half of the 1980s has done long-term damage to U.S. trade by accelerating the economy's shift from manufacturing to services. Expecting the dollar to remain overvalued, American companies shifted production abroad. As a result, the U.S. trade balance in manufactured goods shifted from a surplus of $12 billion in 1980 to a deficit of $158 billion in 1987. Meanwhile, foreign producers established distribution networks in the United States and can now compete more effectively. Although the depreciation of the dollar is squeezing profit margins, foreign suppliers will not abandon the world's largest market.

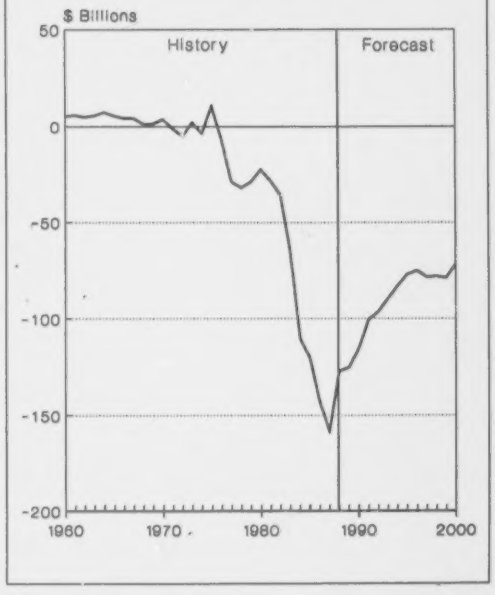
Since most Latin American and East Asian countries link the inflation-adjusted value of their currencies to the dollar, no significant competitive realignment has occurred against these trading partners. Using their labor-cost advantage, the newly industrialized countries have emerged as major suppliers of manufactured goods, including high-tech products. In response to the yen's appreciation, these countries are displacing Japan as a source of imports.

By the late 1990s, a rising oil import bill will again set back U.S. trade. With import volumes rising 4.8% annually and prices climbing 9.5% per year, the cost of oil imports will jump from $42.6 billion in 1987 to more than $218 billion by 2000.

Financing the current account deficit will require a steady inflow of foreign capital. At the end of 1987, foreign investment in the United States exceeded U.S. investment abroad by an estimated $402 billion, and with the current account staying in deficit, net foreign debt is projected to exceed $1 trillion by the end of 1993. The inflows of foreign capital will generate rising interest and dividend payments to foreigners, weakening the services trade balance. Factor income payments to foreigners (a component of services imports) and government interest payments to foreigners are projected to rise from $91.5 billion in 1987 to $144 billion in 1990 and to $335 billion in 2000.

Achieving balanced trade would require more aggressive policy actions at home and abroad. Federal spending cuts or tax increases would curb import demand and reduce the trade deficit. The

Chart 10
U.S. MERCHANDISE TRADE BALANCE



macroeconomic impact of budget tightening could be tempered with monetary accommodation. Lower interest rates would depress the dollar and thereby enhance U.S. competitiveness. A successful trade policy must enlist the cooperation of our trading partners in stimulating their domestic economies and expanding the market for exports.

Industrial Production

Despite the slowdown in economic growth, the expansion of industrial output will accelerate over the projection period. Growth in real GNP will slip from 2.8% to 2.3%, while production growth edges up from 2.8% to 2.9%. Growth in production has not exceeded that in the economy by such a large margin since the 1960s. The favorable position of the industrial sector stems from a shift in the composition of GNP towards goods and away from services. This shift in the composition of GNP began in late 1986 and will continue throughout the 1990s. The expansion of consumption and government spending, which have been the engines of growth over the last decade, will slow while the merchandise trade balance will continue the improvement begun in late 1986. In addition, the stronger industrial sector, slower labor-force growth, and international competitive pressures will ensure a strong investment outlook. The combination of favorable outlooks for trade and investment will reverse the falling share of goods in GNP that has occurred over the past 25 years.

The sharp decline in the dollar and the subsequent improvement in the trade balance are very important to the long-run industrial outlook. The trade turnaround has provided the major underpinning for the accelerating growth of manufacturing output in 1987. The deficit in merchandise trade, which peaked in 1986 at $158 billion, is forecast to improve dramatically to $100 billion by 1991, then steadily shrink to $26 billion by the end of the century. The restoration in the nonoil merchandise balance is even more dramatic: it swings from a deficit of $115 billion in 1987 to a surplus of $112 billion by 2000, led by a sharp improvement in the trade balance in capital goods. Even the deficit in motor vehicles improves (in part because of the production of foreign name-plates within the U.S.), while deterioration in the consumer goods deficit slows. In all cases, exports will grow strongly and import growth will lag.

The combination of changing patterns of domestic demand and improving trade positions in most industries will have a considerable impact on the industrial sector over the remainder of the decade. The slowing of consumption spending will slow the growth in production of consumption goods from 2.9% between 1974 and 1988 to 2.2% by the end of the forecast period, while the gains in equipment investment and the sharp turnaround in trade in this sector will boost production growth from 3.2% to 4.1%. The slowing of defense spending will be clearly reflected in the steep drop in output growth of defense and space equipment from 5.0% to 3.0%. Meanwhile, the output growth of materials industries will accelerate from 1.7% to 2.9% from 1988 to 2000 as these industries benefit from the strength in trade and the trade-induced strength in their endmarkets.

Growth in the business equipment industries and their suppliers will lead the advance in output over the projection period. The high-tech industries will actually slow slightly, although they are still setting a high standard: output of computers and office equipment will grow at a 5.2% annual rate, communication equipment at 4.8%, and instruments at 4.6%. Suppliers to these industries will also experience healthy growth, with electronic components expanding at a 7.0% rate. A number of old-line machinery industries are also expected to do well. Construction and allied equipment should rebound from its depressed base at a 6.2% annual rate, led by strengthening construction and drilling markets, rising demand for materials-handling equipment, and the trade turnaround. Other machinery industries, including metal working, general and specialized industrial, and service industry equipment, will grow less rapidly (an average of less than 3.0% per year) than the total as they continue to struggle with superior foreign technology.

Growth in the transportation industry will be led by continued expansion in the aircraft industry (4.6% per year) and truck output (3.2%). Automobile output is forecast to slow to 2.5%, with almost half of this attributable to quality improvements rather than unit growth.

Growth in construction materials will be mixed, reflecting the improving outlook in nonresidential markets and the slowing growth in residential construction. Output expansion in structural metal products should accelerate from 0.7% annually between 1974 to 19887 to 1.8% over the projection period; concrete increases from 1.9% to 2.4%, and cement climbs to 0.5%. Growth in lumber output will slow from 3.2% to 1.3%, while household furniture production growth holds steady at 2.0%. Growth in appliances is steady at 2.6% as the improving trade situation, which is very significant in

this sector, cushions the slowing domestic demand.

The overall slowing in consumer spending during the next 12 years, only partly offset by improving trade, is obvious in most industries. Growth in apparel output will slow from 1.8% to 1.0% as domestic producers continue to face higher labor costs than foreigners. Textile output will grow by only 0.8%, constrained by high capacity utilization levels. Soaps and toiletries (part of which go to industrial uses) are expected to grow at a 2.0% rate, less than half their earlier pace. Production of drugs will continue to expand at a 3.4% rate, aided by demographics and increased government support. Radio and television output growth is forecast to slow to 3.1%, and leather products will continue to decline. Consumer instruments and miscellaneous manufacturing (which is largely consumer oriented) will buck the slowdown and actually experience faster output growth as a result of expanding domestic demand and the improvement in trade.

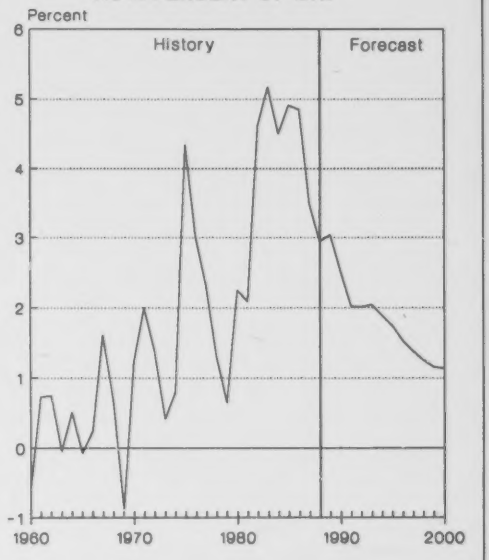
Materials output should expand more rapidly over the course of the projection period than in the past, although this comparison is disproportionately influenced by the improving outlook for primary metals, which have been devastated over the last 13 years. Output growth among the major nondurable material industries will actually slow but remain repectable (for example, basic chemicals will rise by 1.9%, synthetic chemicals by 4.5%, and pulp and paper by 2.3%).

Capacity utilization in manufacturing will average 84.1% over the projection period, slightly higher than the 79.3% average since 1974. Relatively strong investment growth will narrow the current wide disparity in utilization rates among the individual industries.

Government

Although downward pressure on federal spending continues, the DRI TREND projection assumes that Congress fails to achieve the amended Gramm-Rudman-Hollings targets in fiscal 1989 and beyond. The unified budget deficit is forecast to improve only slightly from $165 billion in 1989 to $125 billion in 1991. Thereafter, a period of relatively slow growth, brought on by tighter money, is expected to thwart further improvement for several years, with the deficit remaining above $100 billion through 1998. Nevertheless, when measured relative to GNP, the deficit improves from 2.9% in 1988 to 1.8% in 1991 and 0.8% in 2000. This improvement, however, is precarious, requiring stringent fiscal policies (modest spending growth and excise tax hikes) and continued economic growth.

Chart 11
FEDERAL BUDGET DEFICIT
AS A PERCENT OF GNP



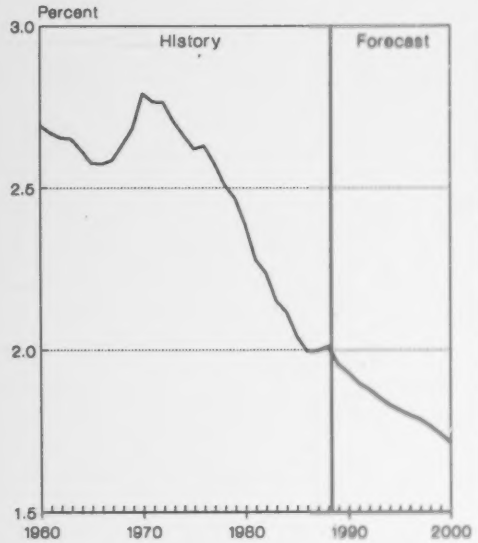
In the next 12 years, state and local governments will face conflicting budget pressures. Although the 7.6% growth of total expenditures between 1988 and 2000 is expected to fall below the 8.6% annual gains recorded between 1974 and 1988, outlays in several categories should accelerate. Spending on construction and environmental protection, for example, should rise in response to decaying infrastructures and the passage of the Clean Water Act, and a growing school-age population will necessitate greater spending on education. At the same time, however, cutbacks in federal grants, voter resistance to higher taxes, and competition to attract new industry will constrain revenue growth. On the whole, state and local governments should weather these pressures well.

Energy

DRI's energy forecast shows the average acquisition price of foreign crude oil will stay below $25 per barrel until 1995. With worldwide demand increasing, the call on OPEC will increase throughout the forecast period (to 30 million barrels per day by 2000) and the cartel, therefore, will regain some pricing power. Significant energy inflation is thus

likely to return by the mid-1990s. Although it is impossible to predict the precise timing of the price hikes, the TREND projection assumes that oil prices rise from $25 per barrel in 1995 to $44 by the end of the century and that real price increases average about 6% in the late-1990s. Even so, the real price of imported oil should remain well below its 1980 peak throughout the projection period.

Chart 12
ENERGY-TO-GNP RATIO



Although current energy prices remain low, conservation has not as yet run its course and energy demand is expected to grow at a consistently slower pace than real GNP. While demand surpassed its 1979 peak of 79 quadrillion British thermal units (quads), total energy usage should hit only 90 quads by 2000. The amount of energy consumed per real dollar of GNP in that year will be only about 60% of its 1970 peak.

Despite the outlook of high relative energy inflation, domestic oil production is projected to decline from 8.3 million barrels per day (mmbd) in 1987 to 5.8 mmbd in 2000. Thus, even assuming relatively slow growth in energy demand, dependence on imported oil will pick up sharply from 8.6 mmbd in 1990 to 12.5 mmbd in 2000. The ratio of oil imports to GNP, which fell from its 1980 peak of 2.9% to only 0.8% in 1986, will creep up slowly but steadily, reaching 1.7% by the end of the projection period.

Table 2
NATIONAL LONG-TERM PROJECTIONS
(Average Annual Rates of Change)

	History				Forecast			
	1970-1975	1975-1980	1980-1988	1970-1988	1988-1990	1990-1995	1995-2000	1988-2000
Composition of Real GNP								
Gross National Product	2.2	3.4	2.9	2.8	2.1	2.5	2.2	2.3
Final Sales	2.4	3.4	2.7	2.8	2.5	2.4	2.3	2.4
Total Consumption	2.8	3.2	3.3	3.1	2.0	2.0	1.8	1.9
Nonresidential Fixed Investment	1.3	6.2	3.2	3.2	1.8	3.3	4.3	3.5
Residential Fixed Investment	1.0	3.6	4.3	3.5	1.0	2.4	1.5	1.8
Prices and Wages								
Implicit Price Deflator	7.1	7.7	4.5	6.1	4.1	4.9	5.3	5.0
CPI-All Urban Consumers	6.8	8.9	4.6	6.4	4.7	5.1	5.5	5.2
Average Hourly Earnings-Mfg.	7.2	8.0	4.4	6.1	4.2	5.5	6.1	5.6
Production and Other Key Measures								
Industrial Production	1.6	5.1	3.0	3.2	2.4	3.2	2.8	2.9
Housing Starts [Mil. Units]	1.79	1.70	1.54	1.65	1.47	1.55	1.58	1.55
Unemployment Rate [%]	6.1	6.8	7.5	6.9	5.6	5.6	5.7	5.6
Federal Budget Surplus [NIPA, $Bil]	-25.1	-41.3	-157.3	-88.4	-148.3	-132.6	-126.6	-132.7
Money and Interest Rates								
Money Supply [M-2]	10.0	10.1	8.5	9.3	5.4	7.7	8.1	7.5
New High-Grade Corp Bond Rate [%]	7.9	9.4	11.5	9.9	9.6	9.5	9.0	9.3
Federal Funds Rate [%]	6.8	8.6	9.6	8.6	8.4	7.7	7.2	7.6

Note: Growth Rates are calculated between the years in the column headings. Averages are for the periods 1971-1975, 1976-1980, etc.

Source: DRI/McGraw-Hill, TRENDLONGO389 National Economic Forecast.

N.C. Highlights

- North Carolina's population will continue to grow but at a slower rate in the next 12 years than the fairly rapid growth experienced since 1974. The state's growth has been seventh largest in the nation during the 1980s, exceeded only by California, Texas, Florida, Georgia, Arizona and Virginia. The state is expected to grow by approximately 718,000 in the 1980s and 660,000 in the 1990s.

- North Carolina will grow faster than the nation but slower than the South Atlantic states of Florida and Georgia, losing its ranking from 10th in the nation currently to 11th by 1995. North Carolina, Virginia and Maryland will all grow at about the same pace during this time period.

- In-migration has been an influential force in North Carolina's past growth patterns. Between 1970 and 1980, the net in-migration of 245,000 persons accounted for 38% of the state's 643,000 population increase. Net in-migration is expected to continue at approximately 40,000 people per year during the next 12 years.

- The natural increase component of population growth, births minus deaths, will decline from 398,000 during the 1980s to 243,000 during the last decade of this century. As this happens, in-migration will become the dominant source of population growth for the state.

- Between 1988 and 2000, the public school population (ages 5 to 17) will increase by about 30,000 statewide, returning to the same enrollments experienced in 1980.

- The leveling off of the college age group (ages 18 to 24) should reduce the strain on the state's colleges and universities for new buildings and dormitories.

- The median age of North Carolinians is projected to increase from 29.6 in 1980 to 36.7 in 2000. This aging of the state's population is due primarily to the anticipated increase of 218,000 in the 65 and older age group between 1988 and 2000. (The population less than 24 years-old will experience no growth during this same time period.)

- The median age for the labor force will increase from 34.4 in 1980 to 39 in 2000. Because of their work experience, the older labor force in 2000 should improve both the quality and productivity of the work force.

- Manufacturing output in North Carolina will grow by 2.6% annually, slower than the 4.2% recorded since 1974. The faster growing industries will be electrical and nonelectrical machinery, rubber and plastic products, and instruments.

- Slower growth in the working age population (ages 25 to 64) and less rapid increases in the rate of female labor force participation will cause the rate of growth in the state labor force to slow to 1.3% per year, down from 2.1% since 1974.

- Reflecting weaker output growth in the state's traditional nondurable goods industries and moderate productivity improvement throughout the manufacturing sector, total employment in manufacturing will fall by over 30,000 jobs by the year 2000.

- Total nonfarm jobs will increase by over 460,000 as the nonmanfacturing sector continues to employ an even larger share of the state work force.

- An older, more experienced work force, combined with an increase in the capital-labor

ratio, underly the expected gains in labor productivity in manufacturing. Real average hourly earnings will move up steadily in the 1990s as factory workers can enjoy the benefits of the improved productivity performance.

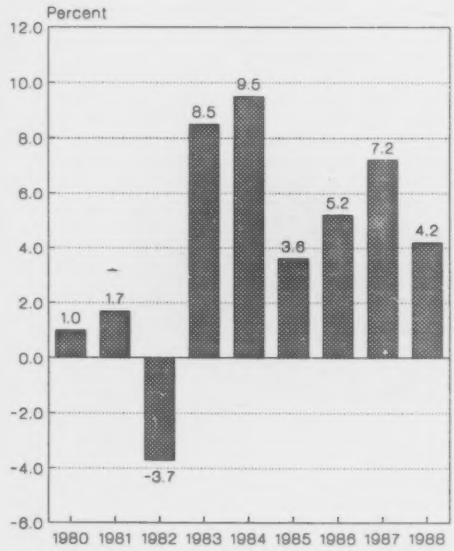
- Total real nonresidential construction in North Carolina will grow at 2.3% per year during the 1990s as the current excess capacity of commercial buildings is absorbed and new industrial capacity is added.

- From a peak of nearly 86,000 units in 1985, total housing starts in North Carolina are forecast to slide to around 50,000 units by 2000. This downward trend generally reflects two important demographic realities: 1) a slowdown in overall population growth; and 2) fewer persons in the home buying age group.

Long-Term North Carolina Economic Forecast

The North Carolina economy had a difficult act to follow in 1988. Industrial production expanded by a solid 4.2%, but this paled in comparison to the export-related 7.2% surge in output in 1987. Output growth in the durable goods sector in 1988 was led by nonelectrical machinery (15.1%), primary metals (11.1%), transportation equipment (9.9%), fabricated metals (7.6%), and instruments (6.3%).

Chart 13
GROWTH IN N.C. MANUFACTURING OUTPUT



In the nondurables group, strong growth in output was recorded in the chemicals (8.3%), printing and publishing (7.9%), and rubber and plastics (7.4%) industries. Output growth in the textiles industry fell sharply to 0.2% following a strong 6.7% gain in 1987 as the dollar strengthened during the year.

Based on the survey of establishments, total nonfarm employment grew to 2,967,900 in 1988, a gain of 105,300 or 3.7% over 1987. Standing at an average level of 867,000, total manufacturing employment grew by 11,000 jobs or 1.3% during 1988. Looking at 1988 in detail, after a recovery year in 1987 manufacturers trimmed their payrolls in early 1988, wary of the impact of the stock market crash on new orders. Between January and May, total manufacturing jobs fell by over 5,400. As the recessionary fears faded, manufactures resumed hiring, adding over 12,100 workers by October. Employment levels slipped in the last two months, principally as a result of the loss of nearly 3,400 textile jobs.

At the industry level, strong output growth boosted employment in the primary metals (6.9%), nonelectrical machinery (4.0%), printing and publishing (2.8%), rubber and plastics (2.4%), and chemicals (2.0%) industries. Weakening demand combined with strong productivity gains trimmed the number of jobs in tobacco products (-3.3%), lumber and wood (-2.7%), and apparel (-1.4%).

As has been true during the decade of the 1980s, the nonmanufacturing sector was the prime producer of new jobs for the North Carolina economy during 1988. Total nonmanufacturing employment expanded by 94,200 jobs or 4.7%, led by the services industries which added 33,500 employees or 6.9%. The growing share of all services in total U.S. consumption along with extraordinarily strong demand in business and health care services accounts for much of the growth. Growth in transportation and utilities sector employment remained strong in 1988 at 4.2%, or 5,900 new jobs, largely the result of rapid expansion of the state's regional airports. New construction of airport facilities, factories, highways, and schools offset the slack in residential and commercial building activity, resulting in a 3.0% (4,800 jobs) gain in construction employment during 1988.

Employment in the trade industries rose by 34,900 or 5.4% during 1988. Growth was particularly strong in wholesale trade as the repeal of the inventory tax created an incentive to locate new facilities in North Carolina. Although remaining strong in 1988, growth in financial sector employment slowed to 3.2% (4,100 jobs) after gains of over 7.0% in the two previous years. This deceleration in job growth is largely the result of: 1) the aftershock of the Wall Street crash which reduced the volume of activity of financial institutions; 2) the impact of the housing slowdown on employment in real estate; and 3) slower expansion of the state's "super-regional" banks into other Southeastern states.

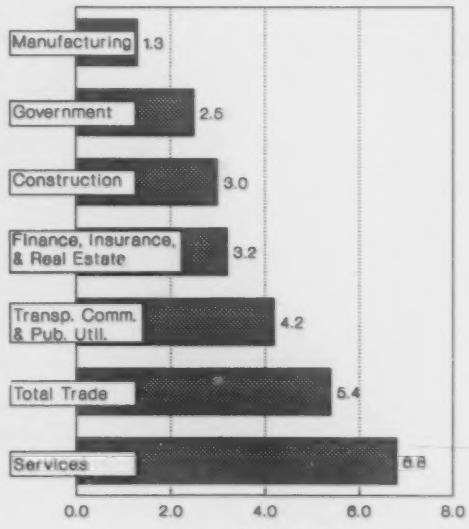
Growth in wage rates in North Carolina remained moderate in 1988. After a 3.8% gain in 1987, growth in average hourly earnings of manufacturing production workers held at that same level in

1988. It was, however, less than the 4.1% average increase in consumer prices. The average wage of all nonfarm workers is estimated to have increased at an average rate of 5.7% in 1988. Combined with the increase in the number of nonfarm workers, total wage and salary disbursements increased by about 9%. Nonwage income (principally employee benefits, income of proprietors, dividends, interest, rents, and transfer payments) grew at a slower 7.0% pace. Therefore, overall total personal income in North Carolina expanded at an average rate of 8.2%, a 3.9% gain in real terms. This was also slightly ahead of the 7.5% increase recorded by the U.S. as a whole.

With income growth remaining strong and consumers feeling confident, state retail sales expanded by about 9.0% or 4.5% above the rate of inflation in 1988. Dampened by rising mortgage rates and excess inventories of homes in many locations, total new housing starts fell to 60,400 in 1988, down from 72,900 in 1987. Similarly, shipments of mobile homes in 1988 fell to 19,100 from the 22,600 recorded in 1987.

As the national economy attempts a "soft landing" in 1989 and 1990, growth in state real personal income is expected to slow to 3.5% and 1.7% respectively. Manufacturing employment is expected to decline in 1989 and 1990 due to a combination of weaker demand growth, continued productivity enhancements, and the resurfacing of foreign competition. Continued growth of nonmanufacturing sector emploment is expected to boost total nonfarm jobs by about 2% in 1989 and 1.7% in 1990. Weaker income growth and an erosion of consumer confidence will reduce real retail sales growth to around 2% in each year. Housing starts are expected to slide to 58,000 by 1990 before mortgage rates moderate late in that year.

Chart 14
N.C. EMPLOYMENT GROWTH BY SECTOR, 1988



Over the remainder of the decade of the 1990s, the share of manufacturing employment to total nonfarm jobs will continue to decline from 34.5% in 1980 and 29.2% in 1988 to 24.3% in 2000. Employment in nondurable goods manufacturing is expected to shrink by about 57,000 jobs between 1990 and 2000. As was true during the late 1970s and early 1980s, most of the loss in nondurable goods employment will occur in the textiles and apparel industries as a result of new investment in labor-saving equipment and continued intense foreign competition. Durable goods producers will continue to expand their payroll jobs, albeit at a moderate pace, adding 30,900 new employees.

The expected rise in the share of nonmanufacturing jobs is not a recent phenomenon. Over the decade of the 1990s, over 410,000 new nonmanufacturing jobs are expected to be created in North Carolina. The projected average annual growth rate of 1.7% is, however, noticeably slower than the 3.4% expected during the 1980s.

Demographic forces play a major role in the long-term projection for final demand in North Carolina. As the baby-boom generation moves into the 45-64 age group, the rate of growth in household formation will slow, resulting in weaker demand for furniture, appliances, and housing services as compared to the period since 1974. Real retail sales growth is expected to average 2.3% during the 1990s, in line with real disposable income growth but down significantly from the 6% gain experienced during the "spending spree" of the 1980s. After holding steady at near 60,000 units through the early 1990s, total housing starts in North Carolina decline to around 50,000 units by the end of the decade.

Forecast Detail

Demographic Assumptions

Recent trends in North Carolina's population show an 1.2% increase in 1988 growth over the prior year, followed by a large decline in growth from 1985 to 1986, and a tremendous surge in growth from 1983 to 1985. From 1980 to 1983 the annual growth rate was approximately 1%, and between 1983 and 1985 the annual growth rate jumped to around 1.5%.

The predominant cause of fluctuation in North Carolina's population growth in recent years has been due to corresponding trends in net migration into the state. During the period 1970 to 1983, annual net in-migration varied between 0.42% and 0.45% of the current total population, never exceeding 27,000 persons. Between 1983 and 1985 annual net in-migration more than doubled that of the 1970 to 1983 period to around 0.90%, averaging more than 55,000 persons. Annual net in-migration declined once again between 1985 and 1986 to 0.53% or 33,000 persons. The 1986 to 1987 influx has once again increased to about 46,000 (0.72%). Net in-migration declined slightly in 1988 to approximately 42,000 (0.65%).

Projected Demographic Trends

Overall, North Carolina total population is expected to increase from 6.49 million in 1988 to 7.27 million in the year 2000. This represents an average annual rate of growth of 1.0%, down from 1.2% during the 1970 to 1988 time period. The fundamental basis for projections of North Carolina's population is the population base reported in the 1980 federal

Table 3
RECENT NORTH CAROLINA POPULATION TRENDS
(Values Adjusted To Represent Annual Changes)

		Growth				Natural Increase		Net Migration	
Date	Population	Amount	Percent	Births	Deaths	Amount	Percent	Amount	Percent
April 1970	5,237,248[1]								
		64,317	1.17	86,154	46,362	39,792	0.72	24,524	0.45
April 1980	5,880,415								
		59,849	1.02	84,189	48,740	35,449	0.60	24,400	0.42
July 1981	5,955,226								
		61,243	1.03	84,830	48,877	35,953	0.60	25,290	0.43
July 1982	6,016,467								
		60,546	1.01	84,881	49,360	35,521	0.59	25,025	0.42
July 1983	6,077,013								
		88,618	1.46	84,920	50,603	34,317	0.57	54,301	0.89
July 1984	6,165,631								
		90,603	1.47	87,689	52,010	35,679	0.58	54,924	0.89
July 1985	6,256,234								
		69,028	1.10	89,810	53,788	36,022	0.57	33,006	0.53
July 1986	6,325,262								
		82,556	1.31	91,855	54,954	36,901	0.59	45,655	0.72
July 1987	6,407,818								
		79,940	1.25	93,481[2]	55,324[2]	38,157	0.60	41,783	0.65
July 1988	6,487,758								

[1] Adjusted for estimated undercount.
[2] Assumes July 1985 to July 1986 births and deaths approximated by corresponding values for calendar year 1985.

Table 4
NORTH CAROLINA POPULATION ESTIMATES AND PROJECTIONS, 1970-2000
By Selected Age Groups, Race, and Sex

	July 1970[1]	July 1975[1]	July 1980[1]	July 1985	July 1986	July 1987	July 1988	July 1989	July 1990	July 1992	July 1995	July 2000
Total	5,107,830	5,538,200	5,895,377	6,256,234	6,325,262	6,407,818	6,487,758	6,559,548	6,629,389	6,757,398	6,949,786	7,273,284
Ages												
0-4	436,928	422,803	404,437	417,931	422,463	426,010	430,343	434,124	436,772	435,115	432,369	422,839
5	94,581	89,069	82,660	79,092	78,934	79,036	79,062	78,994	79,262	83,522	84,664	82,520
6-13	815,495	785,872	747,238	714,837	712,423	710,758	709,939	707,054	706,252	716,318	727,247	746,697
14-17	412,531	420,100	419,615	396,593	397,314	396,427	391,734	387,691	387,126	375,170	371,647	381,938
18-21	420,420	459,230	486,844	452,129	446,662	448,131	450,626	454,504	458,774	444,923	424,049	439,723
22-24	261,132	300,293	335,040	370,030	360,946	355,502	346,021	334,205	320,131	334,133	349,621	301,066
25-44	1,245,280	1,459,423	1,657,752	1,907,478	1,948,202	1,988,494	2,032,575	2,074,085	2,108,162	2,131,869	2,166,331	2,198,252
45-64	1,004,286	1,085,925	1,154,231	1,210,099	1,226,853	1,247,915	1,267,234	1,284,982	1,306,787	1,374,663	1,479,101	1,702,158
65 -	417,177	515,485	607,560	708,045	731,465	755,545	780,224	803,909	826,123	861,685	914,757	998,091
0-4	436,928	422,803	404,437	417,931	422,463	426,010	430,343	434,124	436,772	435,115	432,369	422,839
5-17	1,322,607	1,295,041	1,249,513	1,190,522	1,188,671	1,188,221	1,180,735	1,173,739	1,172,640	1,175,010	1,183,558	1,211,155
18-24	681,552	759,523	821,884	822,159	807,608	803,633	796,647	788,709	778,905	779,056	773,670	740,789
25-64	2,249,566	2,545,348	2,811,983	3,117,577	3,175,055	3,236,409	3,299,809	3,359,067	3,414,949	3,506,532	3,645,432	3,900,410
65 +	417,177	515,485	607,560	708,045	731,465	755,545	780,224	803,090	826,123	861,685	914,757	998,091
0-15	1,555,794	1,505,448	1,436,635	1,411,236	1,410,363	1,407,668	1,408,104	1,407,415	1,409,574	1,417,076	1,433,033	1,441,929
16-64	3,134,859	3,517,267	3,851,182	4,136,953	4,183,434	4,244,605	4,299,430	4,348,224	4,393,692	4,478,637	4,601,996	4,833,264
65 +	417,177	515,485	607,560	708,045	731,465	755,545	780,224	803,909	826,123	861,685	914,757	998,091
Race												
White	3,921,981	4,222,155	4,468,080	4,742,350	4,793,269	4,856,671	4,916,718	4,970,578	5,022,961	5,118,952	5,263,045	5,502,151
Other	1,185,849	1,316,045	1,427,297	1,513,884	1,531,993	1,551,147	1,571,040	1,588,970	1,606,428	1,638,446	1,686,741	1,771,133
Sex												
Male	2,500,241	2,699,595	2,860,747	3,010,915	3,039,260	3,087,9239	3,123,558	3,155,258	3,186,338	3,244,734	3,332,545	3,481,054
Female	2,607,589	2,838,605	3,034,630	3,245,319	3,286,002	3,319,895	3,364,200	3,404,290	3,443,051	3,512,664	3,617,241	3,792,230

[1]Not adjusted for under(over) count.

census. The "aging forward" of this base dominates these projections. The median age is rapidly increasing (moving from 26.5 years in 1970 to 32.6 years in 1988, and projected to reach 36.7 years by 2000). This effect causes projected births to rise and then fall in spite of steadily rising fertility. It causes projected deaths to increase rapidly despite an improving mortality rate. Only the assumption of fairly constant net in-migration is not affected by the rising median age.

Birth Rate Assumptions. North Carolina's total white and nonwhite fertility rates are currently significantly less than the national average. If childbearing for women of all ages continues at its current (1986) rate, the average white woman in North Carolina will have 1.55 children during her lifetime and the average nonwhite woman in North Carolina will have 1.91 children during her lifetime. The corresponding averages for the nation (1985 data) are 1.75 for whites and 2.17 for nonwhites.

It was assumed that current ratios of state to national fertility for each age and race group would remain constant through the year 2000. The 1990 and 2000 birth rates for North Carolina were calculated from projected birth rates for the United States (unpublished data from new national projection series, using black for nonwhite) by making this assumption. Looking at these rates, it is apparent that during the next 13 years white fertility for both North Carolina and the nation is projected to increase slightly, yielding averages for lifetime children per white female of 1.56 for the state and 1.78 for the nation as a whole by the year 2000. Nonwhite fertility is projected to decrease somewhat, yielding averages for lifetime children per nonwhite female of 1.80 for North Carolina and 2.09 for the nation as a whole by the year 2000. In spite of these changes in projected fertility, however, both white and nonwhite births are expected to peak in the late 1980s and early 1990s, as the effect of the "baby boom" cohorts moving through their prime childbearing years dominates any changes in fertility.

In summary, fertility in North Carolina is currently below the replacement level of 2.1 and is expected to decline further in the future. Current fertility rates are 1.56 for whites and 1.86 for blacks, both below national averages of 1.78 for whites and 2.17 for other races.

Death Rate Assumptions. In general, North Carolina death rates are slightly higher than those of the nation as a whole, although for young women of all races they are slightly lower. Over the next century, North Carolina death rates are expected to converge toward national rates and reach full equality by the year 2080. The survival rates forecast for North Carolina were developed from the 1980 state survival rates and projected survival rates for the nation (unpublished data from new national projection series). For the nation as a whole, life expectancy at birth is projected to increase by approximately three years from 1980 to the year 2000, as death rates drop significantly in all age, race, and sex groups. North Carolina will mirror this improvement; however, the number of deaths in the state will continue to rise as the movement of the population into higher risk age groups dominates the improvement in age-specific mortality.

In summary, North Carolina death rates are slightly higher than those of the nation as a whole, although for young women of all races they are slightly lower. North Carolina's life expectancy is assumed to improve, however, during the next 12 years as death rates drop significantly in all age, race, and sex groups. The number of deaths will continue to rise, as the movement of the state's population into higher risk age groups dominates the improvement in age-specific mortality.

Migration. Net migration to North Carolina is projected to follow recent experience (1980-1987). During the 1980s and 1990s decades, net in-migration should average approximately 40,000 per year with the influx in the 1980s slightly larger than in the 1990s.

North Carolina's population, which will continue to grow through the end of the century, will approach 7.3 million by 2000. However, the rate of growth of the population over the forecast period (1987-2000) is expected to slow relative to that of the previous decade as the a "baby boom" generation passes through the prime childbearing years.

Between 1988 and 2000, the school age population (ages 5 through 17) is projected to increase by only 0.2% (30,400), reversing the decline during the period 1970 to 1988. This increase is all within the younger age groups, with the kindergarten age group (5 years of age) expected to gain over 3,400 persons and the grammar school age group (ages 6 through 13) expected to gain 37,000 persons. Contrasted with this total gain in the younger school

age groups is the expected loss of 9,800 persons in the high school age group (ages 14 through 17). The traditional college age population (ages 18 through 24) peaked between 1980 and 1985, and is expected to decline by 7.9% (55,900 persons) during the forecast period. The "second wave of the baby boom" will move into the school age groups during the forecast period.

Table 5
NORTH CAROLINA
ESTIMATED TEN-YEAR NET MIGRATION
(April to April)

DECADE	1970-1980[1]	1980-1990[1]	1990-2000
NUMBER	280,670	385,165	384,836
RATE(%)[2]	5.36%	6.55%	5.83%

[1]Based on 1970 federal census as adjusted for under(over) count.

[2]Migration Rate = (Number of migrants for the decade/ population at beginning of decade).

The working age adult population (ages 25 through 64) is expected to increase by 18.2% (600,600) between 1988 and 2000, with roughly 60% of this increase occurring in the older half of the working age population (ages 45 through 64). This is a reversal of the growth pattern of the last decade, when over three-fourths of the increase of the working age population was in the younger worker age group (ages 25 through 44). (By 1988 almost all of the "baby boom" cohorts had moved into the younger worker age group.) Sometime after 2000 this pattern should reverse again, as the "baby boomers" reach retirement age and their children move into the labor force.

The retirement age (ages 65 and over) population will continue to expand tremendously, reaching almost one million by the year 2000. During the forecast period, the population in this age group will increase by 27.8% (217,800) as a result of: 1) larger population cohorts reaching retirement age; 2) declining mortality; and 3) net in-migration of retirees. The increase in persons will be roughly the same as the corresponding increase during the previous decade, although the percentage increase will be much smaller due to the significantly larger base population.

Industrial Production

The evolving structure of the North Carolina industrial base is the primary cause of the expected slowing of manufacturing output to an average rate of 2.6% over the forecast period, down from a strong 4.2% since 1974 (see Table 6). Although the expected shift in the composition of GNP towards goods (mainly capital goods) and away from services is favorable for U.S. manufacturing overall, the continued dominance of low-growth, or declining, consumer goods industries in the North Carolina manufacturing sector results in a projected slowdown in total output growth. As a group, the low-growth industries face a weakening of real domestic consumer spending over the forecast period. Additionally, their relatively labor-intensive production processes hinder the ability of these industries to take advantage of the turnaround in foreign trade. Specifically, as was the case since 1974, growth in the production of leather products is expected to be the weakest in North Carolina, declining by an average annual rate of 2.5% due to the continued dominance of foreign producers. Despite highly automated production facilties, North Carolina production of tobacco products will show little growth over the next 12 years primarily due to lower domestic tobacco consumption. Textile output will grow by only 0.6% per year, constrained by high capacity utilization and a greater-than-average reluctance on the part of producers to expand capacity. Growth in apparel output will slow from 3.8% to 0.8% as North Carolina producers continue to face higher labor costs than foreigners. Growth in lumber production is forecast to slow to 1.2% per year as housing starts slip and the growth of spending on repairs and alterations declines.

With the exception of the food products industry, the medium-growth industries will benefit from the improved outlook for U.S. industry and foreign trade, which cushion the slowdown in domestic consumer spending. The projected increase in the output of food products in North Carolina reflects the combined effect of a growing population and the increasing demand for higher-valued convenience foods.

Although their projected growth rates are slower across-the-board, the high-growth group is expected to remain largely unchanged as compared to the 1974-1988 period. As a group, these industries are relatively capital-intensive, producing

Table 6
NORTH CAROLINA
GROWTH IN MANUFACTURING OUTPUT
(Average Annual Growth Rate)

	1974-1988	1988-2000
High Growth		
Electrical Machinery	6.7	5.6
Nonelectrical Machinery	9.7	5.5
Rubber and Plastics Products	6.7	5.0
Instruments	5.8	4.6
Transportation Equipment	12.2	4.6
Printing and Publishing	6.8	4.0
Chemicals and Products	4.8	3.2
Medium Growth		
Paper and Products	4.2	2.9
Food and Products	5.3	2.7
Miscellaneous Manufactures	4.5	2.4
Fabricated Metal Products	4.1	2.3
Furniture and Fixtures	4.6	2.1
Primary Metals	6.4	1.9
Stone, Clay, and Glass	4.3	1.9
Low Growth		
lumber and Wood Products	4.1	1.2
Apparel and Products	3.8	0.8
Textile Mill Products	1.9	0.6
Tobacco Products	1.2	0.4
Other Nondurables (Principally Leather Prod.)	1.2	-2.5
Total Manufacturing	4.2	2.6

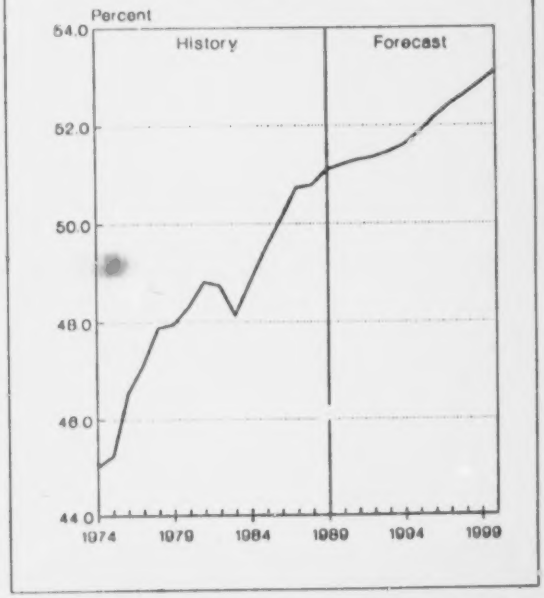
Source: DRI/McGraw Hill, Regional Information Service, Winter 1989

intermediate and final goods and materials for the business sector. Growth in business equipment will lead the way, particularly in the output of computers and office equipment, communications equipment, and instruments. Upstream suppliers, particularly of electronics, will benefit from the strong demand for business equipment. Transportation equipment production grow at a 4.6% annual rate, spurred by gains in motor vehicle parts and accessories, ship and boat building and repair, and recreational equipment. Plastics, which are used at all stages in the manufacturing process, will be one of the fastest growing industries as firms create new products, repackage old ones, and substitute plastic for other materials. As the demand for information continues to surge, printing and publishing will be a high-growth industry. The table entitled North Carolina Manufacturing Production Indexes (page 36) provides detailed output forecasts.

Labor Force, Employment, and Unemployment

Since 1974, the North Carolina labor force has grown at a healthy 2.1% average rate for a total of 3.34 million persons in 1988. This strong increase in the state labor force largely resulted from: 1) the acceleration of the state's working age population (ages 25 to 64) due to the aging of the "baby boomers"; 2) the increase in the rate of female labor force participation which drove up the overall participation rate to nearly 51% in 1988 from 45% in 1974; and 3) strong net in-migration into North Carolina by persons attracted by abundant job opportunities, a relatively low cost-of-living, and a favorable climate.

Chart 15
N.C. LABOR FORCE PARTICIPATION RATE



Looking ahead, growth in the working age population will slow to about 1.0% from the 1.6% estimated since 1974 as the "baby boomers" move toward "middle age." Although the rate of female labor force participation will continue to increase, the increases will be less dramatic with the overall participation rate edging up to 53.5% by the year 2000. North Carolina's comparative cost advantage

and good weather will no doubt remain; however, slower economic growth over the next 12 years will result in less (although still positive) net in-migration. Annual increases in survey employment are expected to average 1.2% between 1988 and 2000, compared to 2.2% since 1974. Consequently, the rate of growth in the state labor force slows to 1.3% over the forecast. With the growth in the labor force only slightly outpacing job growth, the rate of unemployment rises slowly from 3.6% in 1988 to 4.8% in 2000, still below the national rate of 5.5%.

Growth patterns for the establishment employment series are similar to those for the household survey. Total nonfarm employment in North Carolina will grow at a 1.2% annual rate between 1988 and 2000, the same as projected at the national level. North Carolina employers are projected to create 464,000 new jobs, a 15.6% gain. Service and trade employers will provide most of the new jobs, but the fastest growth will be in the finance, insurance, and real estate, averaging 2.2% annually through 2000. North Carolina will continue to gain share of the South Atlanic region's financial industry due largely to Charlotte's further development as a southern banking hub. Employment in services will grow at a 2.1% rate over the interval, ahead of wholesale and retail trade, which will average 1.9% per year. Contract construction employment will advance at a moderate 1.1% annual rate, slightly below the 1.2% expected for that sector nationally.

Growth in the number of government employees will average 1.7% over the forecast with most of the new positions created by state and local governments. Beyond the normal growth expected as a result of population increase, two trends will increase the need for employment in the field of public education. First, the children of the "baby boomers" will be entering the elementary and secondary schools over the next 12 years, requiring new schools and additional classroom teachers and support staff. Second, reflecting the emphasis on productivity and competitiveness, state and local governments in North Carolina are working to improve the quality of public education. Initiatives have been introduced to provide early education opportunities, reduce classroom size, prevent dropouts, upgrade the teaching profession, strengthen cirricula, and give parents more options in choosing a school for their children. Most of the programs require additional funding; many require additional personnel. The growth spurt in employment in public education to a large degree explains the 1.7% annual growth expected in state and local government jobs, which will add 90,600 jobs to payrolls.

In the manufacturing sector, total employment is forecast to decline at a rate of 0.3% or over 34,000 jobs. At first glance, declining employment would appear to be at odds with the projected 2.6% per year growth in manufacturing output. The explanation rests with future improvements in output per worker, or labor productivity. Rapidly rising wage rates in the late 1970s and early 1980s followed later by the pressure from foreign competition pushed American industry toward greater investment in modern plant and equipment, boosting labor productivity. North Carolina manufacturers were especially successful in improving the productivity of their work force, as output per worker rose by nearly 5.1% between 1982 and 1988, compared to only 1.8% in the previous six years. Although the rate of productivity growth is expected to slow to around 3.0% per year over the next 12 years, this exceeds the projected rate of manufacturing output growth and will result in a decline in total manufacturing jobs.

Table 7
NORTH CAROLINA MANUFACTURING OUTPUT, PRODUCTIVITY, & EMPLOYMENT
(Average Annual Growth Rate, 1988-2000)

SIC Category	Output	Productivity (1)	Employment
Food & Products	2.7	3.2	-0.5
Tobacco Products	0.4	1.4	-1.0
Textile Mill Products	0.6	3.2	-2.6
Apparel & Products	0.8	2.2	-1.4
Lumber & Wood Products	1.2	1.5	-0.3
Furniture & Fixtures	2.1	2.1	0.0
Paper & Products	2.9	2.7	0.2
Printing & Publishing	4.0	1.8	2.2
Chemicals & Products	3.2	3.0	0.2
Rubber & Plastics	5.0	3.5	1.5
Leather & Products	-2.5	0.1	-2.4
Stone, Clay & Glass	1.9	2.3	-0.4
Primary Metals	1.9	1.6	0.3
Fabricated Metal Products	2.3	1.9	0.4
Nonelelctrical Machinery	5.5	3.6	1.9
Electrical Machinery	5.6	4.4	1.2
Transportation Equipment	4.6	3.3	1.3
Instruments	4.6	3.7	0.9
Misc. Manufacturers	2.4	2.4	0.0

(1) The effective rate of growth in output per employee.

Source: DRI/McGraw Hill, Regional Information Service, Winter 1989

Table 7 shows the projected output, productivity, and employment growth rates by industry in North Carolina. In the low output-growth group (see Table 6), advances in productivity swamp the projected growth in output, meaning fewer factory jobs by the year 2000. However, the quest for improved productivity is evident even among the high output-growth industries. Electrical equipment manufacturers, for example, will add less than 10,000 new workers during the next 12 years as productivity growth of 4.4% per year nearly matches the 5.6% projected growth in production. Therefore, after accounting for the impact of productivity growth and the state's industrial structure, manufacturing employment is projected to decline in the face of moderately healthly increases in output over the forecast interval.

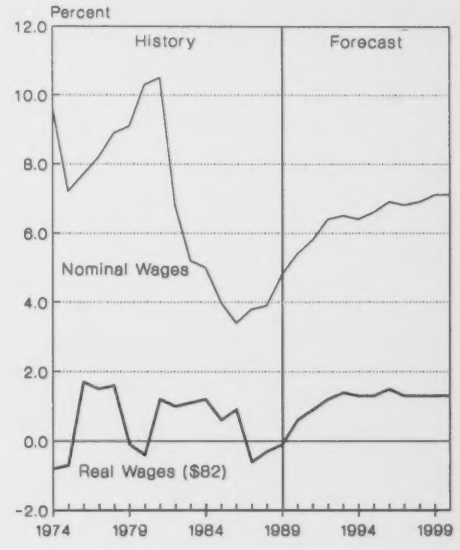
State Personal Income

Over the period 1974 to 1988, average hourly earnings of manufacturing production workers grew at an average annual rate of 6.7%. However, as shown in Table 8, the growth in earnings was quite volatile. As the double-digit rate of consumer price inflation was reflected in wage demands, average hourly earnings growth in North Carolina peaked at 10.5% in 1981. Earnings growth fell by nearly four percentage points in 1982 as the Federal Reserve Board tightened monetary policy, precipitating a national economic recession. Increases in the manufacturing hourly wage have been weak since the 1982 recession. Low rates of inflation, concerns about job security, particularly in the state's traditional manufacturing industries, and the pressure from foreign competition have kept a lid on increases in hourly earnings.

As the rate of economic growth cools in the near-term, the growth in hourly earnings will do little more than keep up with the rise in consumer prices. Over the longer-term, real growth in manufacturing hourly earnings will improve as workers become more productive, reflecting a higher capital-labor ratio and a more experienced work force. During the latter half of the 1990s, average hourly earnings will grow by 7.3% annually, compared to a 5.5% average rate of inflation. Over the full 12 years of the forecast, average hourly earnings are expected increase 6.6% annually.

Increases in wages and salaries per worker in manufacturing have exceeded increases in hourly earnings since 1974, averaging 7.5% per year as a result of faster wage growth of supervisory and administrative employees. Over the next 12 years, average annual wages and salaries per worker will grow by 6.1% per year, slightly less than the rate of growth in hourly earnings.

Chart 16
GROWTH IN N.C. MANUFACTURING WAGES



In the nonmanufacturing sector, average wages and salaries per worker grew by 6.0% between 1974 and 1988, largely because of slow wage growth in the important wholesale and retail trade industry. Spurred by wage gains in the business and health services occupations, the average wage rate in nonmanufacturing will grow at 6.7%, slightly ahead of manufacturing.

Total wage and salary payments, which represented 64% of total personal income in North Carolina during 1988, will increase at a 7.8% annual rate through 2000. During the projection period, taxable nonwage income (largely property and proprietors' incomes), which accounts for 16% of total personal income, will grow by only 6.1% primarily as a result of weak growth in rental and farm proprietors' incomes. Nontaxable nonwage income (employee benefits plus transfer payments less employee contributions to social insurance), 20% of total personal income in 1988, is forecast to advance by 8.2% annually. Overall, total personal income in North Carolina increases by 7.7% per year

Table 8
NORTH CAROLINA
MANUFACTURING HOURLY EARNINGS
VERSUS INFLATION

	Average Hourly Earnings	Consumer Price Index
1974	9.6%	11.1%
1975	7.2	7.7
1976	7.7	5.7
1977	8.2	6.5
1978	8.9	7.6
1979	9.1	11.3
1980	10.3	13.5
1981	10.5	10.3
1982	6.8	6.1
1983	5.2	3.2
1984	5.0	4.3
1985	4.0	3.5
1986	3.4	1.9
1987	3.8	3.7
1988	3.9	4.1

over the forecast, or by 2.3% in real terms.

Economic growth in North Carolina has exceeded that of the U.S. since 1974. State per capita income rose from 81% of the national average ($4,580 vs. $5,655) to 85% ($13,927 vs. $16,480) by 1988. In the slow growth environment predicted over the forecast period, state per capita income can do little more than hold its own relative to the national average.

Business Investment

In 1987 (the latest year for which data is available), total business investment in North Carolina reached the highest level ever recorded with manufacturing and nonmanufacturing industries announcing a combined total of $5.39 billion in capital investment, a rate of growth of 3.1% over 1986. In manufacturing, new and expanding manufacturing companies invested an estimated $2.54 billion in 1987. Of that total, nearly $900 million was invested by manufacturers new to North Carolina, up 62% from 1986. As in past years, textile manufacturers led the way in capital investment, with more than $614 million of new and expanded facilities in 1987. Chemical producers ranked second with $365 million, followed by food processors ($256 million) and electrical ($221 milllion) and nonelectrical ($203 million) machinery manufacturers (see Table 12).

New and expanding nonmanufacturing investment in 1987 was estimated at $2.85 billion. The leading nonmanufacturing industries were construction ($1,330 million), services ($515 million), and transportation, communication, and utilities ($514 million).

Driven by healthy increases in commercial building, total real nonresidential construction in North Carolina has advanced by 2.1% annually since 1974, well ahead of the 0.6% rate estimated for the U.S. as a whole. Looking ahead, slower economic growth combined with the current surplus of commerical buildings will hit nonresidential construction activity in the near-term. As the excess capacity of commercial buildings is absorbed and new industrial capacity is added, real nonresidential construction is expected to advance at a 3.3% rate between 1991 and 2000.

Retail Sales and Housing Starts

During the "consumption boom" of the 1980s, inflation-adjusted retail sales grew by over 6% in North Carolina, well ahead of real disposable income growth. Sales of durable goods led the way at 9.8% per year, while nondurable goods sales increased at a respectable 4.2% rate. Over the next 12 years, the outlook calls for real retail sales to grow approximately in line with income growth, an average of 2.0% per year. Relatively strong growth in furniture, household appliances and entertainment equipment will boost durable goods sales to an above average growth rate of 2.9% annually. Dampened by slow growth in food and clothing, and an actual decline in gasoline consumption during the 1990s, nondurable goods sales growth will trail at 1.2%.

After peaking at 78,500 units in 1972, total housing starts in North Carolina fell dramatically to a low of 40,600 units in 1975 as the result of higher interest rates followed by the deep recession of 1973-75. All of the underlying factors influencing new residential construction activity were favorable beginning in 1976:

(1) As a result of the prolonged recession, the desired stock of housing (mainly a function of demographic forces) was greater than the actual stock of housing. This gap between the desired and actual stocks ("stock gap") was a positive force which boosted housing construction.

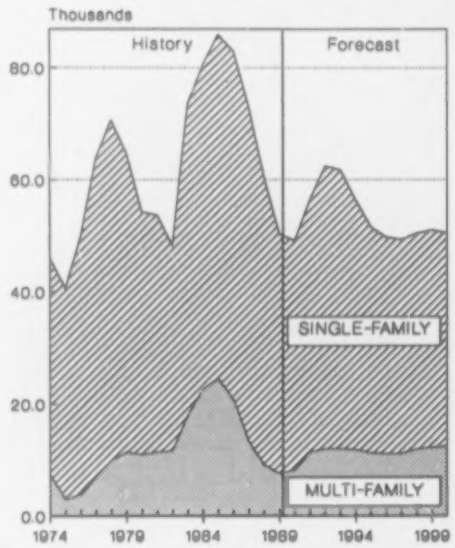
(2) The equity effect of purchasing a home is reflected in the real after-tax mortgage rate. The monthly payment on a mortgage is not equivalent to monthly expenditures for consumption of housing since a home is most likely appreciating in value. If appreciation exceeds the mortgage rate, the real interest lost is negative, as was the case from 1976 to 1979.

(3) The demand for housing is also dependent on the affordability of housing, best approximated by the relationship between real per capita income growth and the rise in housing prices. Affordability improved greatly immediately following the 1973-75 recession.

Total housing starts recovered to 70,600 in 1978 after which the "stock gap" turned negative while mortage rate and housing prices soared. As the North Carolina economy fell into a severe recession in 1982, housing starts slipped to 48,000 units. Multi-family construction held up well, however, as the 1981 federal tax changes provided incentives for investment in rental property.

Beginning in 1983 the state's current housing recovery has been strong and prolonged. Through 1987 total housing starts averaged 79,000 units, with a peak of 85,700 in 1985. New housing construction will slide to 60,400 units in 1988 with the return of double-digit mortgage rates and the existing excess supply of multi-family units. As the inventory of multi-family units is absorbed in 1989 and 1990, total new starts will remain weak, averaging about 50,000 per year. Lower mortgage rates combined with pentup demand and a mini-recovery in the multi-family market will boost housing starts

Chart 17
N.C. HOUSING STARTS



to 62,000 in 1992 and 1993. Total new units will subsequently trend lower over the latter half of the 1990s to around 50,000 by the year 2000. This trend largely reflects the impact of three demographic processes: (1) slowing population growth relative to other regions; (2) an anticipated decline in the number of people in the home buying age group; and (3) an expected slowdown in the growth of the number of retirees.

Table 9
NORTH CAROLINA LONG-TERM ECONOMIC INDICATORS

	1974	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Labor Force (000)	2,488.2	2,856.02	2,919.0	2,941.0	2,932.9	3,032.8	3,116.2	3,176.1	3,275.7	3,342.8	3,417.1
Total Employment (000)	2,373.2	2,668.4	2,730.5	2,674.5	2,673.4	2,827.8	2,948.4	3,007.2	3,129.6	3,222.0	3,296.1
Unemployment Rate (%)	4.6	6.6	6.5	9.1	8.9	6.8	5.4	5.3	4.5	3.6	4.1
Establishment Employment(000)											
Total Nonagricultural	2,048.2	2,380.3	2,391.4	2,347.1	2,419.0	2,565.1	2,650.9	2,744.2	2,862.6	2,967.9	3,025.6
Manufacturing	789.7	820.1	820.7	782.3	796.2	835.6	828.6	832.9	856.0	867.0	864.5
Nondurables	530.1	516.0	510.1	489.1	493.8	501.0	487.0	494.3	509.7	513.3	511.8
Durables	259.7	304.1	310.7	293.3	302.3	334.6	341.7	335.7	346.3	353.6	352.7
Nonmanufacturing	1,258.5	1,560.1	1,570.7	1,564.8	1,622.9	1,729.5	1,822.3	1,911.3	2,006.6	2,100.8	2,161.1
Average Hourly Earnings-Mfg.($)	3.28	5.38	5.94	6.35	6.68	7.01	7.29	7.54	7.83	8.13	8.54
Average Nonfarm Wage Rate($)	8,366	12,797	13,996	14,937	15,798	16,593	17,420	18,155	19,000	19,970	21,196
Total Personal Income ($ Bil.)	25.05	47.18	52.89	55.87	60.72	67.85	73.03	78.65	85.38	92.43	100.28
Farm	1.08	0.64	1.02	0.94	0.52	1.28	1.01	1.09	1.25	1.23	1.24
Nonfarm	23.98	46.54	51.87	54.93	60.20	66.57	72.02	77.56	84.13	91.20	99.04
Wages	17.14	30.45	33.54	35.02	38.14	42.57	46.18	49.83	54.39	59.27	64.13
Other	6.84	16.09	18.33	19.91	22.06	24.00	25.84	27.73	29.74	31.93	35.91
Total Population(000)	5,469.9	5,895.4	5,955.2	6,016.5	6,077.0	6,165.6	6,256.2	6,325.3	6,407.8	6,487.8	6,559.5
Per Capita Income ($)	4,580	8,002	8,881	9,286	9,992	11,005	11,673	12,434	13,324	14,247	15,288
Real Disposable Income Per Capita (1982 $)	7,179	7,845	7,920	7,860	8,195	8,736	8,919	9,291	9,462	9,780	10,002
Investment in Nonresidential Structures (1982 $ Bil.)	3.05	3.61	3.61	3.41	3.33	4.72	4.33	3.93	4.30	4.06	3.55
Housing Starts (000)	45.90	54.14	53.67	48.29	73.32	80.49	85.95	82.97	72.95	60.42	50.29
Single Family	38.63	43.17	42.18	36.58	55.36	57.77	61.39	62.11	59.67	51.25	42.71
Multi-family	7.27	10.97	11.49	11.71	17.96	22.72	24.56	20.86	13.28	9.17	7.58
Stock of Housing (000)	1,772.8	2,054.3	2,098.1	2,137.4	2,180.5	2,240.3	2,305.0	2,375.1	2,437.3	2,488.9	2,529.7
Median Price of New Homes Sold	35,136	53,254	56,068	60,352	63,533	65,816	71,558	78,318	85,873	91,527	96,525

Table 9 - Continued

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Labor Force (000)	3,469.1	3,520.8	3,563.0	3,602.3	3,642.8	3,686.4	3,731.8	3,776.5	3,816.6	3,858.5	3,902.2
Total Employment (000)	3,296.1	3,352.3	3,398.8	3,422.2	3,446.1	3,499.0	3,556.4	3,597.9	3,633.9	3,677.0	3,714.0
Unemployment Rate (%)	5.0	4.8	4.6	5.0	5.4	5.1	4.7	4.7	4.8	4.7	4.8
Employment (000)											
Total Nonagricultural	3,047.6	3,098.8	3,159.5	3,177.4	3,188.6	3,238.4	3,295.0	3,331.9	3,362.9	3,402.0	3,431.4
Manufacturing	859.0	864.1	860.3	844.2	836.4	840.9	847.1	845.9	841.9	838.6	832.7
Nondurables	506.9	505.4	499.0	485.6	475.9	472.4	470.8	466.5	460.8	455.5	449.5
Durables	352.2	358.7	361.3	358.6	360.5	368.4	376.3	379.3	381.1	383.1	383.1
Nonmanufacturing	2,188.6	2,234.7	2,299.2	2,333.2	2,352.2	2,397.6	2,447.9	2,486.1	2,521.1	2,563.4	2,598.8
Average Hourly Earnings-Mfg.($)	9.01	9.53	10.13	10.80	11.54	12.36	13.27	14.23	15.25	16.37	17.56
Average Nonfarm Wage Rate($)	22,269	23,699	25,465	27,007	28,539	30,418	32,604	34,990	37,574	40,373	43,310
Total Personal Income ($ Bil.)	106.78	115.22	124.99	133.64	142.66	153.50	165.67	178.40	192.90	207.68	223.97
Farm	1.14	1.05	1.11	1.09	1.12	1.13	1.13	1.14	1.16	1.17	1.20
Nonfarm	105.64	114.17	123.88	132.55	141.54	152.37	164.54	177.26	191.04	206.51	222.77
Wages	68.32	73.76	80.05	85.67	91.50	98.72	106.98	115.54	124.78	135.18	146.05
Other	37.32	40.41	43.83	46.88	50.04	53.65	57.56	61.72	66.26	71.33	76.72
Total Population (000)	6,629.4	6,693.4	6,757.4	6,821.4	6,885.4	6,949.8	7,015.3	7,080.7	7,146.2	7,211.6	7,273.3
Per Capita Income ($)	16,107	17,214	18,497	19,591	20,719	22,087	23,615	25,195	26,895	28,798	30,793
Real Disposable Income Per Capita (1982 $)	10,037	10,167	10,379	10,471	10,531	10,653	10,798	10,911	11,024	11,152	11,264
Investment in Nonresidential Structures (1982 $ Bil.)	3.37	3.50	3.66	3.66	3.56	3.82	4.12	4.10	4.20	4.50	4.69
Housing Starts (000)	49.10	56.44	62.40	61.71	56.31	51.51	49.72	49.32	50.44	51.03	50.48
Single Family	40.90	44.99	50.42	49.66	44.47	40.21	38.60	38.10	38.49	38.73	37.97
Multi-family	8.21	11.45	11.98	12.05	11.84	11.30	11.12	11.22	11.95	12.30	12.51
Stock of Housing (000)	2,561.12	2,593.3	2,631.0	2,675.9	2,718.11	2,754.1	2,785.9	2,815.9	2,845.7	2,876.5	2,907.5
Median Price of New Homes Sold	102,971	109,008	115,149	123,440	132,471	140,970	150,244	160,774	172,296	184,845	198,423

Source: DRI/McGraw-Hill, Regional Information Service, and the N.C. Office of State Budget and Management.

Table 10
NORTH CAROLINA LONG-TERM EMPLOYMENT PROJECTIONS
(In Thousands)

	1974	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Total Nonagricultural	2,048.2	2,380.3	2,391.4	2,347.1	2,419.0	2,565.1	2,650.9	2,744.2	2,862.6	2,967.9	3,025.6
Manufacturing	789.7	820.1	820.7	782.3	796.2	835.6	828.6	832.9	856.0	867.0	864.5
Nondurable Goods	530.1	516.0	510.1	489.1	493.8	501.0	487.0	494.3	509.7	513.3	511.8
Food & Products	39.7	44.0	43.3	43.3	42.9	44.0	45.6	47.1	49.2	51.6	52.2
Tobacco	27.8	24.3	24.9	24.7	24.4	24.5	25.9	25.2	24.4	23.6	23.5
Textile Mill	278.3	245.7	238.1	223.2	224.2	221.6	208.3	211.5	220.7	221.8	217.2
Apparel	82.9	88.1	88.4	84.7	88.4	91.3	86.7	88.2	87.6	86.4	85.7
Paper & Products	21.1	21.3	21.7	21.8	21.9	22.3	22.3	21.8	22.1	21.7	22.0
Printing & Publ.	17.0	20.5	21.0	21.5	22.6	24.7	26.2	27.5	28.7	29.5	30.5
Chemicals	37.9	39.4	39.8	38.1	38.9	38.4	37.7	38.4	40.1	40.9	42.1
Rubber & Plastics	21.2	27.1	27.1	25.6	26.0	29.5	30.0	30.4	32.7	33.5	34.2
Other Nondurables	4.2	5.6	5.7	6.1	5.5	4.8	4.3	4.2	4.2	4.3	4.4
Durable Goods	259.7	304.1	310.7	293.3	302.3	334.6	341.6	338.6	346.3	353.6	352.7
Lumber & Wood	34.0	35.5	34.6	31.6	34.8	36.9	36.9	38.1	37.6	36.6	35.5
Furniture	74.4	81.5	83.8	78.9	79.8	84.8	84.7	84.8	89.6	89.4	88.3
Stone, Clay, & Glass	17.4	18.2	17.9	16.0	16.9	19.1	19.6	20.1	20.5	21.2	21.0
Primary Metals	7.0	8.1	9.1	8.7	9.3	10.6	10.9	11.2	11.5	12.3	12.6
Fabricated Metals	22.9	26.0	26.7	24.8	24.7	26.4	26.8	26.6	27.7	30.3	30.5
Nonelectrical Mach.	37.0	49.5	50.9	49.7	50.0	56.2	57.8	56.6	57.0	59.3	61.7
Electrical Machery	47.3	55.3	56.7	53.4	54.4	63.4	65.3	60.8	59.6	59.1	58.68
Transportation Eq.	7.3	14.9	15.8	15.8	17.6	21.3	23.1	23.7	25.3	27.1	26.3
Instruments	7.0	8.6	8.6	8.2	8.5	9.1	9.4	9.6	10.0	10.5	10.4
Miscellaneous Mfg.	5.3	6.5	6.5	6.2	6.4	6.9	7.1	7.2	7.6	7.9	7.9
Nonmanufacturing	1,258.5	1,560.1	1,570.7	1,564.8	1,622.9	1,729.5	1,822.3	1,911.3	2,006.6	2,100.8	2,161.1
Mining	4.6	5.2	4.9	4.6	4.4	4.6	4.8	4.8	4.9	4.8	4.8
Contract Construction	122.8	118.8	115.7	106.9	112.3	132.6	149.2	155.3	159.9	164.7	160.5
T.C.P.U.*	105.2	116.5	116.9	114.7	120.5	126.6	130.5	133.6	141.0	146.9	151.6
F.I.R.E.*	83.7	95.5	98.1	97.8	100.4	103.8	109.4	117.9	126.2	130.3	133.6
Trade	379.7	472.9	478.8	482.7	507.9	548.9	579.5	612.5	643.5	678.4	699.1
Services	259.4	341.4	353.0	357.9	370.4	399.3	428.6	456.2	488.8	522.3	544.0
Government	303.1	409.9	403.4	400.2	407.1	413.7	420.3	431.0	442.4	453.5	467.6
Federal	46.4	49.1	47.8	48.6	49.6	50.1	52.0	53.4	53.3	53.9	55.2
State & Local	256.7	360.8	355.6	351.5	357.4	363.6	368.3	377.7	389.0	399.0	412.4

Table 10 - Continued

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Total Nonfarm	3,047.6	3,098.8	3,159.5	3,177.4	3,188.6	3,238.4	3,295.0	3,331.9	3,362.9	3,402.0	3,431.4
Manufacturing	859.0	864.1	860.3	844.2	836.4	840.9	847.1	845.9	841.9	838.6	832.7
Nondurable Goods	506.9	505.4	499.0	485.6	475.9	472.4	470.8	466.5	460.8	455.5	449.5
Food & Products	52.0	51.8	51.5	50.9	50.2	49.8	49.8	49.7	49.4	49.0	48.5
Tobacco	23.4	23.4	23.2	22.8	22.5	22.2	22.0	21.7	21.5	21.3	21.0
Textile Mill	211.7	208.0	201.4	192.5	186.2	182.7	179.7	175.5	170.8	166.6	162.0
Apparel	85.5	85.8	84.8	81.7	79.5	78.5	77.6	76.4	75.0	73.9	72.7
Paper & Products	22.2	22.4	22.5	22.3	22.1	22.3	22.5	22.5	22.4	22.3	22.2
Printing & Publ.	31.2	31.9	32.8	33.3	33.7	34.5	35.6	36.4	37.0	37.6	38.1
Chemicals	42.7	43.0	42.9	42.3	41.9	41.9	42.1	42.1	42.0	41.9	41.8
Rubber & Plastics	34.0	34.9	35.8	36.0	36.2	36.9	38.0	38.0	39.4	39.9	40.2
Other Nondurables	4.3	4.2	4.0	3.8	3.7	3.6	3.5	3.4	3.3	3.2	3.1
Durable Goods	352.2	358.7	361.3	358.6	360.5	368.4	376.3	379.3	381.1	383.1	383.1
Lumber & Wood	34.7	34.7	34.7	34.7	34.8	34.9	35.1	35.2	35.2	35.3	35.2
Furniture	86.4	86.7	87.0	86.3	86.0	86.7	87.8	88.5	88.9	89.1	89.0
Stone, Clay, & Glass	20.8	20.8	20.7	20.4	20.2	20.4	20.6	20.6	20.4	20.3	20.1
Primary Metals	12.6	12.9	13.1	12.9	12.6	12.8	13.2	13.3	13.2	13.0	12.7
Fabricated Metals	30.5	31.1	31.3	30.8	30.7	31.3	32.1	32.3	32.2	32.2	31.9
Nonelectrical Mach.	62.8	64.3	65.4	65.3	66.3	68.3	70.4	71.8	72.9	73.9	74.6
Electrical Machery	59.6	62.1	62.8	62.1	63.1	65.5	67.1	67.2	67.5	68.1	68.3
Transportation Eq.	26.7	27.9	28.1	28.0	28.6	29.9	30.9	31.1	31.3	31.6	31.7
Instruments	10.3	10.2	10.3	10.3	10.4	10.7	11.1	11.4	11.6	11.7	11.87
Miscellaneous Mfg.	7.8	7.9	7.9	7.8	7.7	7.8	8.0	8.0	8.0	8.0	7.9
Nonmanufacturing	2,188.6	2,234.7	2,299.2	2,333.2	2,352.2	2,397.6	2,447.9	2,486.1	2,521.1	2,563.4	2,598.8
Mining	4.7	4.6	4.7	4.5	4.3	4.3	4.3	4.3	4.3	4.3	4.3
Contract Construction	152.9	158.5	169.8	172.3	168.1	169.0	173.3	174.7	177.3	183.2	187.5
T.C.P.U.*	153.4	154.9	156.2	155.9	155.7	157.3	159.6	160.7	160.9	161.3	161.5
F.I.R.E.*	136.9	141.4	145.1	148.0	150.4	153.3	156.6	159.6	162.5	165.5	168.2
Trade	711.1	729.3	752.6	759.9	764.7	785.7	803.9	816.3	827.3	840.7	848.7
Services	557.4	572.9	592.0	604.7	612.5	624.3	638.0	648.4	657.1	666.9	676.4
Government	472.3	473.0	478.8	487.8	496.4	503.7	512.3	522.1	531.7	541.5	552.1
Federal	56.8	56.3	56.8	57.5	58.0	58.3	59.0	59.7	60.4	61.1	61.9
State & Local	415.5	416.7	422.0	430.3	438.4	445.4	453.3	462.3	471.3	480.4	490.2

*Abbreviations: T.C.P.U. - Transportation, Communication, and Public Utilities
F.I.R.E. - Finance, Insurance, and Real Estate

Source: N.C. Employment Security Commission and DRI/McGraw-Hill, Regional Information Service, Winter 1989.

Table 11
NORTH CAROLINA MANUFACTURING OUTPUT INDEXES
(1973:1Q = 1.000)

	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
Total Manufacturing	1.207	1.310	1.435	1.486	1.563	1.675	1.745	1.790	1.831	1.908
% Change	-3.7	8.5	9.5	3.6	5.2	7.2	4.2	2.6	2.3	4.2
Food & Products	1.516	1.549	1.669	1.800	1.910	2.008	2.110	2.153	2.219	2.295
% Change	5.5	2.2	7.7	7.8	6.1	5.3	5.1	2.0	3.1	3.4
Tobacco Products	0.977	0.978	1.004	1.070	1.073	1.169	1.129	1.154	1.168	1.174
% Change	-9.2	0.1	2.6	6.6	0.3	8.9	-3.4	2.2	1.2	0.5
Textile Mill Products	0.942	1.040	1.047	1.029	1.104	1.177	1.179	1.196	1.206	1.230
% Change	-4.8	10.4	0.6	-1.7	7.2	6.6	0.2	1.4	0.8	2.0
Apparel & Products	1.156	1.348	1.462	1.441	1.532	1.617	1.659	1.661	1.674	1.723
% Change	-9.4	16.6	8.5	-1.4	6.3	5.5	2.6	0.1	0.8	2.9
Lumber & Wood Products	1.078	1.260	1.356	1.423	1.584	1.590	1.605	1.553	1.550	1.585
% Change	-1.7	16.9	7.6	4.9	11.3	0.4	0.9	-3.2	-0.2	2.3
Furniture & Fixtures	1.170	1.327	1.478	1.482	1.552	1.695	1.792	1.792	1.776	1.832
% Change	-7.2	13.4	11.4	0.3	4.7	9.2	5.7	0.0	0.8	3.2
Paper & Products	1.438	1.566	1.657	1.656	1.750	1.889	1.943	2.019	2.084	2.181
% Change	9.2	8.9	5.8	-0.1	5.7	7.9	2.9	3.9	3.2	4.7
Printing & Publishing	1.508	1.598	1.857	1.956	2.132	2.323	2.506	2.636	2.716	2.862
% Change	7.7	6.0	16.2	5.3	9.0	9.0	7.9	5.2	3.0	5.4
Chemicals & Products	1.419	1.522	1.624	1.678	1.828	2.046	2.216	2.352	2.434	2.559
% Change	-4.0	7.3	6.8	3.3	8.9	11.9	8.3	6.1	3.5	5.1
Rubber & Plastics	1.518	1.673	1.990	2.019	2.130	2.402	2.580	2.701	2.801	3.003
% Change	-9.2	10.2	19.2	1.5	5.5	12.8	7.4	4.7	3.7	5.3
Other Nondurables	1.503	1.445	1.291	1.202	1.182	1.191	1.237	1.254	1.222	1.192
% Change	3.4	-3.9	-10.7	-6.9	-1.7	0.8	3.9	1.4	-2.6	-2.5
Stone, Clay & Glass	1.169	1.387	1.698	1.784	1.890	1.913	1.965	1.952	1.984	2.042
% Change	-9.5	18.6	22.5	5.0	5.9	1.2	2.7	-0.7	1.6	2.9
Primary Metals	1.166	1.460	1.779	1.877	1.946	2.228	2.476	2.582	2.623	2.768
% Change	-5.0	25.2	21.8	5.5	3.7	14.5	11.1	4.3	1.6	5.5
Fabricated Metals	1.287	1.282	1.465	1.565	1.617	1.711	1.841	1.862	1.876	1.971
% Change	-3.8	-0.4	14.3	6.8	3.3	5.8	7.6	1.1	0.8	5.1
Nonelectrical Machinery	1.965	2.310	2.947	3.254	3.423	3.719	4.281	4.637	4.865	5.247
% Change	0.5	17.6	27.6	10.4	5.2	8.6	15.1	8.3	4.9	7.9
Electrical Machinery	1.675	1.775	2.252	2.342	2.278	2.378	2.498	2.585	2.769	3.046
% Change	-2.4	6.0	26.9	4.0	-2.7	4.4	5.0	3.5	7.1	10.0
Transportation Equipment	2.763	2.863	3.535	4.117	4.354	4.691	5.154	5.120	5.350	5.858
% Change	30.3	3.8	23.3	16.5	5.7	7.8	9.9	-0.7	4.5	9.5
Instruments	1.571	1.675	1.930	2.009	2.099	2.272	2.414	2.478	2.507	2.608
% Change	-2.1	6.6	15.2	4.1	4.4	8.2	6.3	2.7	1.2	4.0
Miscellaneous Mfg.	1.412	1.411	1.561	1.610	1.707	1.783	1.869	1.919	1.941	2.006
% Change	-0.1	-0.1	10.6	3.1	6.0	4.5	4.8	2.7	1.1	3.3

Table 11 - Continued

	1992	1993	1994	1995	1996	1997	1998	1999	2000	Avg. Growth 1988-2000
Total Manufacturing	1.950	1.966	2.016	2.094	2.172	2.231	2.286	2.342	2.388	
% Change	2.2	0.8	2.5	3.9	3.7	2.7	2.5	2.4	2.0	2.6
Food & Products	2.356	2.405	2.460	2.528	2.608	2.685	2.757	2.829	2.896	
% Change	2.7	2.1	2.2	2.8	3.2	3.0	2.7	2.6	2.4	2.7
Tobacco Products	1.176	1.170	1.167	1.168	1.170	1.175	1.180	1.185	1.189	
% Change	0.2	-0.5	-0.2	0.1	0.2	0.4	0.4	0.4	0.3	0.4
Textile Mill Products	1.213	1.193	1.200	1.220	1.236	1.244	1.252	1.261	1.264	
% Change	-1.4	-1.6	0.6	1.7	1.3	0.6	0.6	0.7	0.2	0.6
Apparel & Products	1.741	1.713	1.718	1.749	1.782	1.796	1.808	1.819	1.823	
% Change	1.0	-1.3	0.3	1.8	1.9	0.8	0.7	0.6	0.2	0.8
Lumber & Wood Products	1.606	1.638	1.673	1.698	1.733	1.763	1.794	1.827	1.850	
% Change	1.3	2.0	2.1	1.5	2.1	1.7	1.8	1.8	1.3	1.2
Furniture and Fixtures	1.871	1.892	1.928	1.992	2.071	2.134	2.196	2.250	2.292	
% Change	2.1	1.1	1.9	3.3	4.0	3.0	2.9	2.5	1.9	2.1
Paper & Products	2.258	2.277	2.332	2.424	2.517	2.578	2.636	2.696	2.741	
% Change	3.5	0.8	2.4	3.9	3.8	2.4	2.2	2.3	1.7	2.9
Printing & Publishing	3.019	3.079	3.180	3.345	3.519	3.643	3.762	3.892	4.002	
% Change	5.5	2.0	3.3	5.2	5.2	3.5	3.3	3.5	2.8	4.0
Chemicals & Products	2.630	2.655	2.723	2.824	2.924	3.006	3.090	3.177	3.245	
% Change	2.3	2.8	3.2	3.4	3.1	2.4	2.7	2.8	2.3	3.2
Rubber & Plastics	3.003	3.179	3.290	3.446	3.673	3.929	4.167	4.390	4.615	
% Change	7.2	5.7	3.5	4.7	6.6	7.0	6.1	5.3	5.1	5.0
Other Nondurables	1.148	1.103	1.071	1.050	1.030	1.002	0.974	0.947	0.917	
% Change	-3.7	-3.9	-2.9	-2.0	-1.9	-2.7	-2.8	-2.8	-3.2	-2.5
Stone, Clay & Glass	2.084	2.108	2.169	2.250	2.321	2.360	2.398	2.445	2.469	
% Change	2.1	1.2	2.9	3.7	3.2	1.9	1.6	2.0	1.0	1.9
Primary Metals	2.827	2.784	2.838	2.989	3.107	3.140	3.147	3.151	3.114	
% Change	2.1	-1.5	1.9	5.3	3.9	1.1	0.2	0.1	-0.1	1.9
Fabricated Metals	2.009	2.017	2.067	2.158	2.244	2.296	2.343	2.396	2.430	
% Change	1.9	0.4	2.5	4.4	4.0	2.3	2.1	2.3	1.4	2.3
Nonelectrial Machinery	5.553	5.737	6.059	6.497	6.953	7.344	7.632	7.913	8.155	
% Change	4.8	5.1	6.0	5.9	5.7	4.8	3.6	3.5	2.9	5.5
Electrical Machinery	3.203	3.277	3.479	3.786	4.038	4.209	4.408	4.629	4.830	
% Change	5.2	2.3	6.2	8.8	6.7	4.2	4.7	5.0	4.3	5.6
Transportation Equipment	6.110	6.209	6.597	7.218	7.754	8.033	8.316	8.614	8.852	
% Change	4.3	1.6	6.2	9.4	7.4	3.6	3.5	3.6	2.8	4.6
Instruments	2.718	2.802	2.954	3.181	3.424	3.620	3.820	3.985	4.151	
% Change	4.2	3.1	5.4	7.7	7.6	5.7	5.0	4.8	4.2	4.6
Miscellaneous Mfg.	2.053	2.035	2.072	2.175	2.280	2.342	2.396	2.451	2.486	
% Change	2.3	-0.8	1.8	5.0	4.8	2.7	2.3	2.3	1.4	2.4

Source: DRI/McGraw-Hill, Regional Information Service, Winter 1989.

Table 12
NORTH CAROLINA INVESTMENT TRENDS
(In Thousands)

SIC Industrial Category	1982	1983	1984	1985	1986	1987	Six Year Totals	Percent Of Total
Food Products	31,248	107,750	92,240	92,483	179,432	255,966	759,119	5.40%
Tobacco Products	140,833	242,058	180,242	489,533	271,369	161,490	1,485,545	10.57
Textiles	333,490	375,991	547,392	359,096	520,369	614,417	2,750,728	19.57
Apparel	28,432	25,004	40,383	24,018	40,389	34,441	192,667	1.37
Lumber and Wood	12,993	40,875	136,867	89,362	23,699	74,440	378,236	2.69
Furniture and Fixtures	24,594	48,995	70,322	63,675	39,746	47,208	294,540	2.10
Paper and Allied Products	113,372	194,227	110,492	149,782	216,802	67,246	851,921	6.06
Printing and Publishing	33,785	33,507	67,579	33,726	16,845	19,950	205,032	1.46
Chemicals	112,306	285,820	182,409	172,514	322,181	365,147	1,440,377	10.25
Petroleum Products	0	0	6,875	2,867	0	160	9,902	0.07
Rubber, Plastic Products	40,547	94,696	72,784	157,421	90,183	97,198	522,829	3.93
Leather Products	3,353	0	846	102	0	3,795	8,096	0.06
Stone, Clay, and Glass	24,303	64,167	99,157	53,495	58,478	134,488	434,088	3.09
Primary Metals	20,565	56,800	59,402	39,396	238,839	42,215	457,217	3.25
Fabricated Metals	57,630	54,663	93,515	44,808	17,190	28,099	295,905	2.11
Nonelectrical Machinery	124,939	99,259	254,429	215,625	111,741	203,431	1,009,424	7.18
Electrical/Electronic Mach.	124,558	316,192	309,755	353,448	295,518	221,372	1,620,843	11.53
Transportation Equipment	26,891	53,775	86,572	173,001	106,610	93,120	539,969	3.84
Instruments	30,075	20,906	131,152	51,889	123,995	67,325	425,342	3.03
Miscellaneous	5,770	8,510	128,955	192,116	3,025	6,805	345,181	2.46
Totals	1,289,684	2,123,195	2,671,368	2,758,350	2,676,411	2,537,953	14,056,961	100.00

Source: N.C. Department of Commerce, North Carolina Economic Development Report, 1987.